CUSTOMS GAZETTE.

No. X.—APRIL-JUNE 1871.

PART VI.

MEDICAL REPORTS FOR THE HALF-YEAR ENDED 31ST MARCH 1871.

PUBLISHED BY ORDER OF

The Inspector General of Customs.

(Published September 11th, 1871.)

[*Reprinted September 1883.*]

SHANGHAI:

PRINTED AT THE CUSTOMS PRESS.

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National Oceanic and Atmospheric Administration

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SHANGHAI, 1st *August* 1871.

SIR,

IN accordance with the directions of your despatch No. 6 *A* (Returns Series) of the 24th June, I now forward to the Returns Department of the Shanghai Office the following documents, to which I have, where it seemed advisable, appended short footnotes (distinguished by the letters of the alphabet):—

A.—Inspector General's Circular No. 19 of 1870.

B.—Dr. JOHN DUDGEON'S Report on the Health of Peking for the half-year ended 31st March 1871.

C.—Dr. JAMES WATSON'S Report on the District of Newchwang.

D.—Dr. GEORGE SHEARER'S Report on Leprosy at Hankow.

E.—Dr. GEORGE BARTON'S Report on the Health of Shanghai for the half-year ended 31st March 1871.

F.—Dr. ROBERT MEADOWS'S Report on the Health of Ningpo for the same period.

G.—A short Memorandum on Disease at Tientsin.

I have the honour to be,

SIR,

Your obedient Servant,

R. ALEX. JAMIESON.

THE INSPECTOR GENERAL OF CUSTOMS,

Peking.

A.—Inspector General's Circular No. 19 of 1870.

Inspectorate General of Customs,

Peking, 31*st December* 1870.

SIR,

1.—It has been suggested to me that it would be well to take advantage of the circumstances in which the Customs Establishment is placed, to procure information with regard to disease amongst foreigners and natives in China; and I have, in consequence, come to the resolution of publishing half-yearly in collected form all that may be obtainable. If carried out to the extent hoped for, the scheme may prove highly useful to the medical profession both in China and at home, and to the public generally. I therefore look with confidence to the co-operation of the Customs Medical Officer at your port, and rely on his assisting me in this matter by framing a half-yearly report containing the result of his observations at.....upon the local peculiarities of disease, and upon diseases rarely or never encountered out of China. The facts brought forward and the opinions expressed will be arranged and published either with or without the name of the physician responsible for them, just as he may desire.

2.—The suggestions of the Customs Medical Officers at the various ports as to the points which it would be well to have especially elucidated, will be of great value in the framing of a form which will save trouble to those members of the Medical profession, whether connected with the Customs or not, who will join in carrying out the plan proposed. Meanwhile I would particularly invite attention to—

a.—The general health of.....during the period reported on; the death rate amongst foreigners; and, as far as possible, a classification of the causes of death.

b.—Diseases prevalent at.....

c.—General type of disease; peculiarities and complications encountered; special treatment demanded.

d.—Relation of disease to { Season. / Alteration in local conditions—such as drainage, &c. / Alteration in climatic conditions.

e.—Peculiar diseases; especially leprosy.

f.—Epidemics { Absence or presence. / Causes. / Course and treatment. / Fatality.

Other points, of a general or special kind, will naturally suggest themselves to medical men; what I have above called attention to will serve to fix the general scope of the undertaking. I have committed to Dr. R. Alex. Jamieson, of Shanghai, the charge of arranging the Reports for publication, so that they may be made available in a convenient form.

3.—Considering the number of places at which the Customs Inspectorate has established offices, the thousands of miles north and south and east and west over which these offices are scattered, the varieties of climate, and the peculiar conditions to which, under such different circumstances, life and health are subjected, I believe the Inspectorate, aided by its Medical Officers, can do good service in the general interest in the direction indicated; and, as already stated, I rely with confidence on the support and assistance of the Medical Officer at each port in the furtherance and perfecting of this scheme. You

will hand a copy of this Circular to Dr. ....., and request him, in my name, to hand to you in future, for transmission to myself, half-yearly Reports of the kind required, for the half-years ending 31st March and 31st October—that is, for the winter and summer seasons.

4.—That the Medical Officer at your port may know who are the other members of the profession with whom he is invited to join in this work, I append a list of the officers at each port or place.

Peking	Dr. J. DUDGEON.
Newchwang	Dr. J. WATSON.
Tientsin	Dr. J. FRAZER.
Chefoo	Dr. CARMICHAEL and Dr. MEYERS.
Hankow	Dr. A. G. REID.
Kiukiang	Dr. G. SHEARER.
Chinkiang.....	———
Shanghai	Dr. BARTON and Dr. GALLE.
Ningpo	Dr. R. MEADOWS.
Foochow	Dr. J. M. BEAUMONT.
„ Pagoda Anchorage...	Dr. SOMERVILLE and Dr. SHERWIN.
Amoy	Dr. JONES and Dr. MÜLLER.
Tamsui	Dr. L. H. FRANKLYN.
Takow	Dr. P. MANSON.
Swatow	Dr. C. M. SCOTT.
Canton	Dr. F. WONG.
„ Whampoa.....	Dr. R. SHILLITOE.

I am, &c.,

(signed) ROBERT HART,
I. G.

THE COMMISSIONERS OF CUSTOMS—*Newchwang*, *Ningpo*, *Tientsin*, *Foochow*, *Chefoo*, *Amoy*, *Hankow*, *Tamsui*, *Kiukiang*, *Takow*, *Chinkiang*, *Swatow*, and *Shanghai*, *Canton*.

B.—Dr. John Dudgeon's Report on the Health of Peking for the Half-year ended 31st March 1871.

In a medical survey of the past six months at Peking, the principal affection that deserves notice from its prevalence is small-pox. Its existence here, as elsewhere in China, is nothing new. It is something uncommon, however, that it should rage epidemically during two successive winters, as if following some regular and independent law, though it is always more or less endemic in the Empire; the influences at work, the atmospheric conditions, etc., being so far as is known, the same. The natives suffer severely, although epidemics do not strike their attention or cause alarm as they do among foreigners. There must be some peculiar quality which makes the poison more virulent at some times than at others.

Small-pox, as a rule, prevails more in winter, and this is the very season when the Chinese, for the reasons stated below, do not vaccinate. The epidemic of 1869–70 seems to have prevailed in an aggravated form along the whole coast of China, attacking and carrying off foreigners and natives. The epidemic of this last winter (1870–71), which broke out at precisely the same period as that of the previous year, has been felt more severely here, and also in Japan, than that of the former winter. The attacks last year were on the whole very mild in Peking. This winter there have been two deaths,—that of a child six months old, unvaccinated, and a vaccinated adult. Both died about the twelfth day. The course of the disease has in every case, the two fatal cases excepted, been greatly modified by previous vaccination. Some of the cases showed considerable divergence from the normal type. A variolous fever without any eruption was tolerably prevalent.

Some have attributed these outbreaks in winter to the fact that at this season the fur or wadded garments, which are supposed to preserve the poison from year to year, are redeemed from the pawn offices, where they have been lying since the spring. But such an argument does not hold good in Europe (where small-pox has been raging during the past year, and where it is likely to rage still more fiercely and universally if the variolous wave, so to speak, which has visited us should travel westward, as it seems to have done after the winter of 1869–70), nor even in all parts of China would it apply, for we are not aware that the pawnbrokers at any season are, as a class, more subject to small-pox than their neighbours. Some skin diseases very prevalent among the Chinese are certainly propagated in this way. The Chinese themselves have no such idea, but ascribe it to some supposed poison communicated by the parents to the fœtus. All therefore inherit more or less a certain original poison, which breaks out as soon as the exciting cause is presented. Their favourite comparison is that of the flint, which requires merely to be struck to bring out the latent fire.[a] There is therefore some peculiar but as yet unexplained atmospheric change favourable to its development. Contagion and infection soon do their work in spreading the disease among such combustible matter as the Chinese suppose themselves to be.

The Chinese are not ignorant of the infectious and contagious nature of small-pox and other diseases. They often kindle a large fire in the *kang* (or earth bed platform in the North) to destroy or drive away the poisonous air. In the upper classes they sometimes remove to other rooms for a few days; they destroy the inner clothing of the patient, or take it, and what he may have worn, to pieces and submit them to a thorough cleaning. Whitewashing is not understood, and consequently never resorted to, and papering is seldom renewed for a like reason. Drainage is never thought of. These sanatory measures are under no Government supervision. Hundreds of the prophylactic measures had recourse to are too ridiculous and childish to be

[a] It is interesting to compare this Chinese belief with the opinion expressed by Violante, following Willis, that the supra-renal capsules are the seat of the small-pox germ, which is possessed by every individual, and which, no matter how long unfruitful, must sooner or later declare itself if life be sufficiently prolonged.

specified. They are generally obtained from quacks, old midwives or the goddess of small-pox. Intelligent Chinese, however, assert that the recipes of a whole century will not prevent the poison from coming out. Although they try innumerable preventive measures, they yet consider it a tolerably lucky thing that a person should have small-pox. Our street diviners never promise long life to a man who has passed 30 years without having had the "flowers." Nothing could be said more offensive or insulting to or of a man than that he has twice had small-pox. The Chinese are afraid, too, of offending the goddess *Tou-chên-niang-niang* (small-pox and measles mother) by the use of derogatory expressions and terms, and hence their high-sounding names for this affection.

The Chinese experience of small-pox is very extensive and accurate. They are very sharp in early diagnosing the disease when intelligent foreigners are sometimes baffled. They consider three sorts or kinds, one called *shun* (順), which is favourable in the extreme and will get better without medicine; a second called *hsien* (險), that can be benefited by medicine, although the patient may die from neglect or bad treatment; and the last called *ni* (逆), which is invariably fatal.

This loathsome disease is in Peking supposed to have come from the South (almost all foreign things here are said to come from Canton), and not to have been known in Peking till about the period of the Yüan dynasty (A.D. 1280–1368). The Mongolian name *hua*, "flowers," is the same as the Chinese, from which we infer that the disease came from China originally. To this day the Chinese assert that it is still unknown in Mongolia. In cold latitudes, and with a hardy people, the Chinese say it does not exist. When the present dynasty came to the throne, the Pekingese who had small-pox or took it afterwards were driven 13 miles out of the city. In the reign of the present Emperor's grandfather a Mongolian living Buddha died here of small-pox shortly after his arrival. Russians, Mongolians and Chinese born in Mongolia or on the frontiers have been known to take it immediately on reaching Peking. All this would seem to show that it is somewhat rare in Mongolia and Manchuria.

The origin of small-pox is shrouded in mystery. It was unknown in America prior to 1492. European nations became acquainted with it about the time of the rise of Mohammedanism.[b] The Greeks and Romans knew nothing of it. MOORE, in his *History of Small-pox*, traces it to China, 1000 B.C. He was probably indebted for his information, directly or indirectly, to the Jesuit writer CIBOT, who asserts that in a medical work in the Imperial Medical College it was stated to have been known for 3,000 years. But we know how books are sometimes made to speak with the authority of antiquity. It needs only a comparatively late writer to make the statement of its immemorial character, or, still better, to mention some dynasty, Emperor or celebrated personage who was in some way connected with it, and the thing is quoted and believed in ever afterwards. The whole question of the antiquity of small-pox is very suspicious; the passages are vague and would apply to many other skin affections; and we know how prone Orientals are to claim for their country some of the most recent inventions. The Bible, so minute in the description of diseases, does not once refer to small-pox. Chinese histories make no mention of it, and little in ancient times, not found in the dynastic annals, is to be credited. But although deficient in such definite information, most Chinese medical works and special works on small-pox trace its rise no farther back than the Han dynasty. About this time there was traffic with Central Asia and by land and sea with India and Arabia by means of travellers and ambassadors, and at that early period enthusiastic and intelligent Buddhist priests visited China, taking with them the classical Indian MSS., particularly those on medicine. KLAPROTH's tables of the Buddhist chronology, translated partly from the Chinese, prove the connexion that subsisted during the first eight centuries. *Vide* WISE's *History of Medicine*. The great probability, therefore, is that small-pox took its rise in the West, probably somewhere in Central Asia not far from the Caspian Sea. In the annals of the after-Han dynasty we have an account of the General PAN CHAO (A.D. 90), who penetrated so far west as to discover the Western Sea *(Hsi-hai)* and adjoining countries, and it was in the

[b] The earliest Western description of small-pox was given by the Alexandrian priest AHRUN, who lived in the seventh century. His *Pandects*, originally published in 30 books, are lost, with the exception of some fragments preserved by RHAZES.

ranks of his army that some Chinese scholars suppose small-pox to have been brought to China. Much dependence cannot, however, be placed even on this, and it is more likely that it was first known in China much later. In the book *Huang-ti Su-wên Ling-ch'u-ching* (黃帝素問靈樞經), written before the Christian era, no mention is made of this disease. Neither is the character for small-pox (made up of *disease* and a *pea*,—from the resemblance of the eruption to the latter) found in the two books by CHANG CHUNG-CHING (張仲景), *Shang-han-lun* (傷寒論) and *Chin-kwei-yao-liao* (金櫃要畧), published shortly after our era and still to be had. The word for measles, *chên*, an old character, denoting originally an ulcer of the lips, is found in the *Shuo-wên* (說文), a book of the Han period (first century). A description of small-pox is found at least in two books, *Chiu-p'ien-so-yen* (就偏瑣言) and *Tou-chên-chêng-tsung* (痘疹正宗), about the time of the Sung dynasty (A.D. 960–1127). The goddess of small-pox is also of comparatively recent origin. In a dictionary of the T'ang dynasty, about the sixth century, the word *tou* is not found. K'ANG HSI's dictionary refers to *tou* (small-pox) as occurring in the *Tzŭ-hui* (字彙), a book of the Ming dynasty, early in the seventeenth century. Altogether we are inclined to believe that small-pox broke out in China much about the same time as in Europe. It originated in China probably towards the latter part of the T'ang dynasty (A.D. 620–907).

Hindoo medicine confirms the view here given of the origin of small-pox. In the Susruta, a systematic medical shastre, founded on the Ayur veda, or science of life or medicine, and probably written some time between the eighth and third century B.C. (certainly after the work of which it is an abridgment, and it is perhaps correctly supposed to have been prepared about the period of the Manu code of laws, 800 B.C.), there is described a disease resembling in some of its features chicken-pox. The affection was of short duration, and no mention is made of its dangerous character and epidemic form. It may have changed its character, like some other diseases, from unknown causes, although it is far more probable, as DR. WISE remarks, that the peculiar and dangerous epidemic small-pox is a new form of disease. At all events the Hindoo writers described it in its present formidable form much later, probably not long before RHAZÈS, the celebrated Arabian physician of the end of the ninth and beginning of the tenth century, described it, some time after which it appeared in Europe. No Hindoo goddess, moreover, is represented as interested in medicine till a later period, when the dreaded small-pox made its appearance and committed great ravages in India. A new form was then given to Kali, named Situlla, wife of Siva, and called the goddess of small-pox.

In regard, therefore, to the time and place of appearance of small-pox China agrees with the general voice of history and tradition.

The Chinese treatment is on the whole of the most empirical kind. The favourite medicines used in other diseases are administered here also. The *vis medicatrix naturæ* plays the most important part, and it is a mercy that it is so in China. Inoculation, which has been known and practised in China since the Sung dynasty (A.D. 960–1127), and which is most probably of native origin, is now almost obsolete. Everyone knows that this method of "planting the flowers," generally by inserting the matter of small-pox in the nostrils, was first introduced into England by Lady Montague, the wife of the British Ambassador at Constantinople, in 1721. It had doubtless found its way to Turkey across Asia from China. The Turks who lived on the Chinese frontiers and carried on considerable intercourse must have carried the knowledge of it westward. Vaccination was brought early to China, and its utility soon became extensively known, and the discovery quickly spread over the Empire. It was introduced into Canton in 1805 by Mr. ALEXANDER PEARSON, a surgeon of the H.E.I. Company, and a tract written by him was translated into Chinese by Sir G. STAUNTON. Several other tracts have been written on the subject, some concealing and others openly acknowledging its foreign origin. The people and officials as a whole have generally adopted it and made it their own. In the North it is traced to Canton, and its English origin is for the most part unknown.

A native tract on vaccination published at Canton in 1817 was republished in Peking in 1828, when vaccination was introduced here by the Prefect TSENG, who had formerly been a mandarin in the South.

Part of Sir G. STAUNTON's tract has been incorporated into the Chinese one. Its discovery is ascribed to a Western barbarian doctor named Chan-na (JENNER), and the story of its having been brought by ship from Manila to Macao, which had children on board for the purpose of keeping up the supply of lymph, is related. The terms English and England are studiously avoided.

As stated above, it was introduced into the north of China by TSENG in 1828. At first it was proposed to have a relay of boys on the road from Canton, to be vaccinated every eight days, but this plan was abandoned, and scabs were sent, which succeeded. There are now several vaccine establishments in this city. Although the Chinese have adopted this Western discovery, it is mixed up in their books and practice with their own medical theories, which betray the greatest ignorance of the principles of physiology and the facts of anatomy. They are very particular regarding the diet, warning most carefully to avoid the smell of whisky, opium, heated *kangs* and dirty or decaying matter. Cocks, certain kinds of fish, beef, eggs, beans and bean-flour are to be avoided for at least 100 days. Buckwheat and cherries are to be shunned for three years after vaccination. The things enjoined are vegetables, pork and salted ham. Three days after vaccination, shrimps, with rice spirit, Mongolian mushrooms and mutton are permitted. In winter only may birds' nests steamed with sugar candy be eaten. The Chinese vaccinate in three places on each arm, on the supposition that it requires six places to neutralise the poison. The poison of small-pox is supposed to be located about four inches below the shoulder and two above the elbow.

Whatever the origin or cause of small-pox may be, the Chinese now do not vaccinate in the winter, for a variety of reasons. They are afraid of some morbid air getting admittance, and they find it highly inconvenient, both on account of the severe cold and the danger of their clothing rubbing and breaking the vesicles, and consequently causing considerable pain, swelling and probable suppuration of the arms, if not frustrating the object of the operation. After vaccination, cold, it is feared, might excite to an attack of small-pox or measles. Formerly money was subscribed for providing accommodation, fires and other conveniences, just as it is now contributed to soup kitchens, foundling hospitals and educational establishments. Vaccination lost all this when its great patron TSENG died. No Government support is extended. The vaccination establishments are carried on privately as business speculations, for although in one sense vaccination is performed gratuitously, yet it is understood that small fees are accepted, and there is a sort of custom which looks well for the philanthropy of the vaccinator, by which the parents of the child to be vaccinated contribute a small sum to the child from whom the lymph has been taken, which of course falls to the establishment. In winter, when there is danger of the lymph becoming exhausted, children are hired to preserve it and keep up the supply. The children of the upper classes are vaccinated at their homes most frequently by having one of the hired children taken by the vaccinator, and thus the lymph is communicated from arm to arm. The introduction of tubes has rendered this course almost unnecessary.

The number vaccinated is of course very small, the yearly number at all the establishments seldom exceeding 3,000. We have ample evidence of the prevalence of small-pox in the numbers of blind persons found on the streets and the almost universal "pitting." It is difficult to find a Chinaman entirely free from "pits." About 10 per cent. probably escape an attack, and of those vaccinated, probably 80 per cent. are protected. Adult Chinese seldom, if ever, take it, for the obvious reason that nearly all have had it in youth. Chinese smile at adult foreigners taking small-pox, as if it were incredible. After a two years' residence in China foreigners would seem to gain an immunity similar to that possessed by the adult natives.[c] Absence from the country for a few years seems to render such persons again liable to small-pox on their return.

From these remarks it will be evident how important vaccination and re-vaccination are to foreigners leaving home for China. Indeed, all persons coming to this country who have neither been vaccinated nor had small-pox, who have passed the age of puberty without being re-vaccinated since infancy, or who have

[c] This does not appear to be the case in Shanghai. Foreigners of the better classes do certainly enjoy considerable immunity from small-pox, but this is attributable to the diligence with which early and periodical re-vaccination is pressed by the local medical practitioners.

no strongly characteristic vaccination marks, ought to be re-vaccinated. There are numerous instances of foreigners taking it within the first week or month after landing in China.

After small-pox, diseases affecting the throat come next to be recorded, from their importance and prevalence during the past half-year. Simple sore throat, tonsillitis, and laryngitis prevailed during the months of March and April. Large numbers of cases of febricula present themselves generally at this season. This year it seemed to prevail almost epidemically, judging from the numbers attacked both among foreigners and natives. I would also mention mumps or parotitis, which prevailed during the same two months among both children and adults, depending upon the same cause, namely, exposure to sudden vicissitudes of temperature. I have known it to result from exposure to the strong north-west wind, which at this season blows with great violence. For a like reason, and as depending on like causes, I ought to mention erysipelas, from which both natives and foreigners have suffered. All the cases recovered that came under my observation. The inflammation was confined to the face and neck, as is most common, and two cases among the natives resulted in suppuration. The Chinese have no proper name for this affection. The name given in BRIDGMAN'S *Chrestomathy—Tien-pao-chuang*—is applied here to another affection altogether, and to one rather of a syphilitic type. It is attributed to cold and exposure to wind, and doubtless debilitated constitutions were certain to suffer severely from the winds and dust-storms that raged here this spring.

The principal throat affection, however, during the past six months has been diphtheria. I reproduce here a few notes on the epidemic of 1866, which hold good regarding that of last winter, although this last did not prevail so extensively nor so long. The epidemic scourged the city for upwards of a year, carrying off vast numbers and committing fearful ravages. Within a month lanes were thinned, families swept away, and the population greatly diminished. Funerals were seen everywhere; the people in large numbers were clothed in white—here the emblem of mourning; and the general and almost invariable answer to every question on the subject was "Died of throat disease." In a family of 26 individuals which came under observation, 24 were carried off in 27 days. In the beginning of the year 1866 diphtheria predominated chiefly in the west of the city, and afterwards extended to the east and south. Very few indeed of the number affected applied at the foreign hospital for relief, partly owing to the great distances, the difficulty of transport, the foreign surgeon, sex,—females being on the whole more frequently affected; but the chief cause was the suddenness of the attack and the shortness of its duration before death closed the scene. All classes were subject to it, but probably more children died than adults. In the west large numbers between 3 and 10 years of age appeared; deaths were not however confined to youth. Many at 50 and 60 years of age also went the way of all the earth. The average duration of the disease was about five days. Those who applied were out-patients, and remained so. Their cases could not be followed up, and any plan of treatment pointed out was not likely to be followed, especially if the patients grew worse. When unable to come to the hospital, they either sank helplessly at their own homes or called in a native doctor, who, of course, could do nothing. The doctors dislike these fatal cases very much. They are obliged to do something for the sake of the profession,—order some decoction or try acupuncture; but for the sake of their credit and trade, they prefer doing nothing. The responsibility of death lies upon the doctor's shoulders, and it was the medicine last given that of course killed the patient. For these reasons it would be fatal to take such as in-patients at our foreign hospitals; the chance of recovery, even with the greatest attention and most prompt applications, being so small. Tracheotomy, difficult to attempt on account of the reluctance of the relatives, and often fruitless in the West, is a thousand times more so here, where the operation and the disease are not understood. In our infancy with such a people, and standing alone, unbefriended and unsupported by imperial or other native power, and where every act is closely and suspiciously scrutinised, serious or hazardous operations ought not to be undertaken. By persisting in an opposite course the good object aimed at is likely to be frustrated. The Chinese in cases of illness do not neglect to appease the evil spirits by burning incense before Buddha or the particular deities supposed to preside over certain diseases.

Diphtheria had raged in former years, but never so long or so fatally as in 1866. That year was an unusually hot one. There was little rain and very little snow. The population was in great poverty; poor,

weakly, scrofulous children are the rule and not the exception; and miserable, unhealthy, over-crowded, unventilated habitations are too common. Drainage has ceased to exist. After rain, pools of water lie everywhere on the street and in the great filthy ditches on both sides, from which the water and mud are taken to allay the dust of the roadway. If this were all, Peking might be a comparatively clean city, but it must be added that the public thoroughfares are the urinals and depositories of all kinds of filth. In respect of symptoms this epidemic was similar to those described by other observers in different places. It was severe and long continued, and the deaths from it rapid and numerous. The first thing complained of was generally headache and erratic fever with more or less marked rigor. The fever afterwards diminished or was entirely absent; there was constipation and a feeling of tightness in the throat. On examining the mouth on the second day, one or both tonsils and uvula appeared swollen and inflamed, the former generally marked with white spots, like points of ulceration, on the surface. These ulcers in tonsillitis are often mistaken for incipient diphtheria, and of course wonderful cures are effected by the application of certain remedies, which are for ever after extolled as specifics; the tumefaction of the tonsils and uvula increases, deglutition becomes more difficult and painful, although this latter character is disproportioned to the inconvenience which exists. The difficulty of swallowing first draws the patient's attention to his disease, and this condition continues throughout, until asphyxia closes the scene. Young children and even adults never complained of severe pain, though unable to swallow; and this peculiarity, so deceptive and so hopeful to the patient, establishes a well-marked difference between diphtheria and the purely local throat diseases. On the second day, and co-existing with the swollen tonsil, is enlargement of the lymphatic glands of the neck on one side or both, and sometimes in front also, the greatest swelling indicating that side on which the greatest damage is to be looked for in the throat. Deglutition has been found difficult in proportion to the swelling of the tonsils, although perhaps the volume of the lymphatic glands may also have something to do with it. In most cases there was a stoppage of the nose, and a flux of serous liquid and often blood by the nostrils. The mouth exhaled a peculiarly gangrenous odour, and the tongue was covered with a thick, yellowish-white mucous coating, except at the tip. The tone of the voice was altered, and as the disease progressed and the swelling outside increased, complete aphonia ensued, accompanied by dyspnœa and sibilous inspiration. The membranous exudation was for the most part first seen on the tonsils, sometimes on the uvula, and at other times in the pharynx. This was very encouraging, because when early seen local treatment was admissible and the extension of the pellicle was in some cases arrested. But the vast proportion of cases came after some days had elapsed, generally on the third or fourth day. This species of inflammation, threatening the air passages with imminent danger, required the most expeditious and careful local treatment, yet most of the patients presented themselves at that stage of the disease when hope was gone. Commencing on an accessible point, it continued to spread upward into the nasal cavities, forward on the hard palate and downwards into the larynx, never extinguishing or exhausting itself or being extinguished on the points which it previously occupied. Like a powerful and victorious enemy, it went on conquering, subduing and occupying without losing ground. The false membranes were only removed to be reproduced in an incredibly short time. The surface denuded of the diphtheron always appeared red, and exuded a few drops of blood. The disease attained its height in a remarkably short period. Many, retiring at night apparently in health, rose in the morning with the disease unmistakably present. In the course of 12 hours from the first feeling of tightness, the membranes have been seen fully formed and covering the entire mouth, and the tonsils and uvula so enlarged as to form a mechanical obstacle to the introduction of liquids as well as to the passage of air.

During part of the same year measles and scarlatina were prevalent. Many cases of the latter were supposed to be diphtheritic when the eruption was absent, but on examination the difference was easily observed. The scarlatinal membrane was not continuous and consistent as was that of diphtheria, and was not so adherent; above all it lacked the invading property, and did not repeat itself on excoriated surfaces, but was localised at the point of its development. The danger of diphtheria lay in its rapidity and tendency, its situation and extension into the trachea.

By the most celebrated French writers on the subject it is denied, and that rightly, to be a gangrenous disease, but that it is *in no way* connected with gangrene may be questioned. I have had occasion to verify in not a few cases the fact admitted by MM. GUERSANT, DAVIOT and others, that true gangrene may be met with in conjunction with the pellicular exudation. The Chinese subjects of this disease were generally of a bad and enfeebled constitution, and there were raging as endemics, measles, scarlet fever and small-pox during part of the time,—affections which are known to predispose to sphacelus. Extensive gangrene has also been seen in connexion with scarlatina anginosa. Gangrene of the tonsils, uvula and fauces has been seen very early in the disease, and the characteristic fetor and gangrenous appearance did not depend altogether upon the putrid solution of the pellicular exudation interspersed with effused blood, as BRETONNEAU observes. It is admitted that diphtheria is a specific inflammation, and as such has its peculiar and essential symptoms depending upon this character and not upon the intensity of the inflammation. But it requires no great intensity of inflammation, if any, in the Chinese to induce gangrene of the parts. The number of cases of cancrum oris shows this.

This affection is certainly contagious, but, as BRETONNEAU observes, to a much less extent than some other diseases. In the majority of cases a connexion was traced with some member of the family then suffering or who had recently been carried off by it, or with some of the neighbours in the same court-yard or in the adjoining houses or in the same lane. In a few cases no connexion could be traced. In a mandarin's family of about 30 individuals rank and file, 11 persons, up to the time of my visit, had been removed by death, including the father and brother, both over 50 years of age. The male and female servants complained of tightness in the throat, but no fatal case occurred among them except in one of their children, a child 5 years of age. Those attacked were related, and had all a similarity of constitution, were pale and sickly, and lived chiefly on vegetable food and sweetmeats. Poverty or superstition too often prevents the Chinese from indulging in animal food. In the above family, and this is the rule among the better classes, the bodies of the deceased were retained for a lengthened period prior to interment. During this time the family—it may be large or the premises may be small—live literally among the dead, with mat awnings erected over their courts, while priests chant prayers and perform the obsequies, and the members of the family themselves howl and weep. In this way disease is propagated.

The severity and rapidity of the disease well-nigh baffled all treatment. In the earliest stage benefit was derived from the usual remedies. A little opening medicine, warm fomentations and gargles, and avoidance of exposure to cold and infection afforded relief, if not immunity, at the very earliest period to not a few who from their family connexions, their own diathesis and their general symptoms, gave every appearance of diphtheria. Yet these cases may have presented only the very simplest form of inflammation. Such were few, and with the fully developed membrane, most, if not all, of the extolled specifics were utterly useless. In the first stage alum was found of some use, but in the more advanced stages it seemed to possess no curative agency either in strong solution or in powder. Of calomel I cannot speak at all highly. It has been extolled by BRETONNEAU on the ground that when applied to a surface either denuded of the false membrane or not yet invaded it is found to prevent reproduction or extension. In this I have been sadly disappointed. After stripping the hard and soft palates of a thick pellicle, dusting it with calomel and alum, brushing it with nitrate of silver in solution and in stick, and with undiluted hydrochloric acid, the diphtheritic false membrane, and not an apparent one caused by the action of the medicine, has been reproduced almost before my eyes. In the case of the first two substances it was very rapidly reproduced; in the other two, more slowly and after an interval of time. BRETONNEAU's beneficial effects from calomel may have been derived from its absorption into the system in the usual way, but certainly not, so far as observation here goes, from simply dusting the parts. Blisters have been inefficacious. In the earliest stage most trust, it would seem, is to be placed in nitrate of silver, alum gargles, keeping up a gentle catharsis, supporting the patient's strength, application of warm fomentations to the throat, and removal from the scene of infection. In the later stages of the Peking epidemic nothing was found of the slightest use. An unfavourable prognosis has in every such case been given, and not a single cure of true

and neglected diphtheritic inflammation has come to my knowledge. The scarlatinal forms and gangrene when not extensive have yielded to treatment, but the pellicular exudation when fully formed, with enlargement of the glands of the neck and of the interior of the mouth, has resisted all attempts.

Such was my experience of that severe epidemic. Since then numerous cases have each winter been brought to my attention. During last winter (1870–71) diphtheria prevailed more extensively than in any year since 1866. No foreigners were attacked, although many of their Chinese teachers have reported its existence and fatality in their own families. There is good ground for believing that the Chinese pundits employed by foreigners to teach them the language are sometimes the means of conveying the poison of contagious and infectious diseases. It is pleasant, however, to report that although small-pox may have been carried in this way, no case of the more deadly disease, diphtheria, so conveyed has come to my notice. I am inclined to believe that many reported cures by the native faculty rest upon a wrong diagnosis. Much that is sometimes called diphtheria by the ignorant and unprofessional may be simple catarrh or laryngitis. As above remarked, such affections were prevalent in the spring.

Diphtheria is called here by such names as *nao-sang-tzŭ* (鬧嗓子), *'hou-pi* (喉癖), *'hou-yung* (喉癰), all signifying more or less malignant sore throat, or narrowing to suffocation of the air passages. The former is the popular expression for it. It is said to be a new disease, and to have been known only for the last 50 years. It seems to be almost entirely confined to Peking. It is said not to be known even at Tientsin. I doubt this very much. No cases, so far as I know, are reported from the hospitals of central and southern China. If this be so, what reason can be assigned for it? Do the same conditions not exist in other parts? Most of the adult cases seen early have recovered; almost all seen after the fourth or fifth day died. I must here except a young married woman, who was rescued as it were from the jaws of death by the free and repeated application of strong hydrochloric acid. All classes and ages have been affected, but it has proved speedily fatal among children, some of whom are reported to have died after one day's illness. Its insidious and almost painless character makes it dangerous. Pain, which drives us all to seek help, is a less prominent symptom than difficult deglutition. The Chinese, so generally indifferent to everything, are less prompt in applying for relief in such instances, probably from the fact that they are rather subject to affections of the throat. Their universal remedy is counter-irritation by chafing with copper cash, pinching the skin between the forefinger and thumb, and sometimes by lancing the tonsils with their long finger nails. Lunar caustic, a gargle of chloride of calcium, nourishing diet, aperients, fomentations, and diluted and concentrated muriatic and carbolic acids have been found extremely serviceable.

Calculus.—No cases of stone are reported from any of the numerous hospitals in China, Canton and Takow excepted. In the former place during the last 12 years as many as 218 have been operated upon at the hospital under Dr. KERR's care. A few cases have been met with in the southern end of Formosa. I am not aware of any explanation having been given of its almost exclusive prevalence at Canton. The Chinese have a strong prejudice against cold water, either taken internally or applied externally, and are astonished at the copious draughts swallowed by foreigners, and the cold baths in which we indulge. Tea is the universal beverage, and water when drunk at all is swallowed warm, after precipitation by alum, and boiling. The common Peking water contains a large quantity of lime, which is deposited on the kettles by boiling. The specific gravity is 1007. The water used for tea is much softer, and is often carried great distances. That for the Emperor is brought into the palace on the backs of animals from the Yü-ch'üan Hill, near the Summer Palace, a distance of 9 miles to the north-west. In the east of the city the water, except near the courses of the intra-mural canals or streams, is for the most part hard and brackish; that on the western side is much softer, and the further west we go the more soft it becomes; specific gravity 1003.

If, as some writers have observed, calculous diseases are most common where the mineral strata are of a calcareous nature, how are we to account for the absence of stone at Peking and other places, and its presence at Canton, where river water, which in China is usually the best, is almost entirely used? Goitre, which is tolerably frequent here, and still more so in the hilly districts to the north and west, is

attributed by the natives to the use of lime-impregnated water, yet it does not seem to be a common affection in the South. Gout and stone are frequently found together. If uric acid calculi, therefore, depend upon a certain acid form of dyspepsia, and have any connexion with rheumatism and gout, stone ought to be of frequent occurrence in all parts of China. Without doubt the most common form of indigestion among the Chinese everywhere, from the very nature of their food, is that arising from over-acidity. Next to itch no other single affection predominates so largely in hospital reports. In the North this disposition to the deposit of uric acid ought to be even still greater, as the diet is much more animal than in the South, and from this form of diet a greater quantity of uric acid is said to be eliminated. Beyond the records of patients operated upon at Canton, I have observed no statement as to the frequency among the population generally, or any particular class, of a constitutional diathesis such as is found in the condition arising from excess of uric acid.

A foreigner residing at present in Peking, but who lived eight years at Canton and some months also in Formosa, is subject to a copious deposit of urate of ammonia with purpurine. He suffered from a similar affection in the South during the past year.

Stone is generally supposed to be more frequently found in cold than in warm climates. In China this seems quite reversed. Diseases of the urinary system are extremely rare, nay, almost absent. No case of calculus or crystalline or amorphous deposit has been seen at the Peking Hospital during the last two years, if the case now to be mentioned be excepted. In March a man from the province of Shantung appeared at the dispensary with a swelling in the region of the navicular fossa. On examination it proved to be a stone, which the patient said had been in this situation for the last 20 days. For four years previously it had been situated at the bulb, and for three years before that he had felt it in the bladder. The stone weighed nearly one drachm, and from its size it was found impossible to extract it without making an incision into the urethral orifice.

Leprosy.—This disease is practically unknown in the north of China. It is called *ta-ma-fêng* (大痲瘋) and *lai* (癩). It seems in its severe form to be confined to the southern provinces, and probably more especially along the sea coast and great rivers. The connexion of anæsthesia with true or tubercular leprosy opens an important field for discussion. It will be found, I believe, that loss of sensation perfectly independent of leprosy is not at all infrequent. In the spring and autumn the Chinese in Peking suffer from rheumatism and attacks of cold from exposure to the frequent and sudden changes of temperature. They are accustomed, moreover, to sleep on the ground, in the court-yards, under the eaves, and, what is almost the same thing, on *kangs*. Many have attributed their *ma-mu*, or loss of sensation, to these causes. They get well under such remedies as Dover's powder, liniments, etc. Arsenic itself, moreover, is said to cause derangement of the nervous system and to produce anæsthesia.

Two or three very suspicious-looking cases have been seen here. The eyebrows were nearly gone. The Chinese as a rule have very little hair on their faces, and the hair of the eyebrows is particularly sparse at the outer angle. As they did not complain of anæsthesia, and the affections of the skin were probably referable to syphilis, which they acknowledged to have had, they were classed accordingly. Psoriasis, and its varieties *niu-pi* (牛皮) (ox hide), and *yü-pi* (魚皮) (fish skin) or *shê-pi* (蛇皮) (serpent skin), referring to its scaly character and property of falling off, is remarkably common, and in some cases might be mistaken for leprosy. During the last eight years the only case that has occurred to me which could be pronounced *bonâ fide* leprosy was the following :—

A man from Shantung aged 30, but in appearance 45 years, came to the hospital with *ta-ma-fêng* or leprosy. His eyebrows were gone; he had lost all sensation in his hands, and complained of impaired vision. His was not a solitary case; he knew in his own neighbourhood seven or eight individuals who were likewise so affected, and all agreed to call it by the above name. It has long existed and been recognised in the locality. The province is mountainous, but whence he came is flat and occasionally inundated by the capricious Hwang-ho. He, like the others so affected, was an agriculturist, and owned

and tilled a few acres of land. His parents and relations never manifested any similar symptoms; th marry, intermingle and have families, and, according to his statement, the affection does not seem to either hereditary or contagious. His relations were not known to have had syphilis or elephantias This patient had the disease for eight years, and had tried all remedies and well-nigh spent his livi on drugs and doctors without any permanent result. Once or twice each year it broke out with gre virulence, when all his symptoms were increased; but the remedy applied seemed by his own accou to keep it to some extent in check. The popular treatment in Shantung consists in acupuncture a the wholesale swallowing of drugs. The former is practised between the eyes, on the cheeks, temple upper lip, chin, fingers, palms of the hand, soles of the feet and on the heels. Immediately on t puncture a small quantity of musk is introduced, and the moxa is used to drive in the benign effec of this drug and drive out the leprosy; at the same time 15 medicines are infused together in seve gallons of water, and boiled down to about one gallon, and this is drunk. The ingredients and quantiti are as follows :—

川芎 牛膝 荆芥 防風 大楓子 蟲魚子 杜仲 梔子 桂枝 苦參 木瓜 陳皮 蒼朮 姜 茶葉

of each 20 ounces.

ABSTRACT of THERMOMETRICAL OBSERVATIONS taken in the Open Air at Peking facing the North from 1st October 1870 to 31st March 1871. Latitude 39° 55′ N., Longitude 116° 27′ E.

1870.	MAXIMA.		MINIMA.		AVERAGES.		RAINFALL.		SNOWFALL.	
	Day.	Night.	Day.	Night.	Day.	Night.	Days.	Amount.	Days.	Amoun
October	75	55	50	37	67	46	7	1 inch	1	a little
November	54	41	38	16	46	28	4	½ "	...	...
December	46	25	22	5	35	15	...	...	1	5¼ inche
1871.										
January	40	19	22	5	32	12	...	...	2	½ inch
February	52	27	26	3	38	17	...	...	5	a very litt
March	69	44	45	19	57	31	...	...	...	...

C.—* Dr. JAMES WATSON's Report on the District in which the Port of Newchwang is situated.

INSTEAD of making a special Medical Report for the last six months, I think it will be well to furnish on the present occasion, as in the first instance, a brief account of the physical characters of that portion of Manchuria in which this port is situated; to describe its climate, its effect on health and disease; and in a general way to give an account of the diseases which have prevailed from the date when the port was opened to foreigners up to the 31st of March 1871. By doing so I shall render it less necessary in future Reports to occupy space by repetitions, and by taking this greater survey I shall be able more correctly to describe the effects which the climate of this region has had on European constitutions.

The port of Newchwang is situated in the southern province of Manchuria (latitude 41° N. and longitude 122° E.), on the left bank of the last complete bend from east to west of the river Liao before it empties itself into the gulf of the same name. It is surrounded on all sides by a dreary plain. Great mountain ranges are seen in the distance stretching in a north-easterly and south-westerly direction, but the nearest hill is some 20 miles distant from the foreign settlement. The country, then, is for many miles in all directions a dull, dead, and dreary flat. In some directions you can travel 40, 50, and 70 miles without encountering a single hill. The only elevations are the graves of the dead, which have often rather a pleasant aspect, as around them there are usually planted trees, and this great plain is very poorly supplied with trees. There are great tracts of utterly barren salt ground on which the rankest weeds will not grow, and in the fertile plain, where good crops abound, the scarcity of shrubs and trees makes even the rich ground look poor. But for the great mountain ranges in the distance, which afford a grateful contrast, the effect of this poor scenery on European residents would be unmistakably depressing.

CLIMATE.—This is essentially dry. The only differences between the climate of this province and that of the two other northern provinces of Manchuria are that here the winters are shorter, while the summers are longer and warmer. The port of Newchwang has a latitude very much the same as Rome, but the following remarks will prove how unlike the two climates are.

Summer of Southern Manchuria.—It is comparatively rare for the thermometer to indicate heat so high as 90° or 92° F. when the instrument is placed in perfect shade. During the last six years 92° has not been reached above a dozen times, and when that amount of heat has been attained it only remained so high for a few hours on each occasion. In well-built houses, and where the Venetian blinds are closed before the sun pours its rays upon the windows, 84° or 86° may be looked upon as the ordinary heat we have to endure and provide against. For two months in the summer this heat will be very frequently attained, but there are many days when the heat is not so great. Out of doors, of course, it is much greater; but, protected as foreigners are in the south of China by white covered umbrellas and pith hats, it is not considered a hardship to have to move about in the sun, although of course open air exercise and work are generally and wisely taken in the morning and evening. There is here no rainy season. We have days of rain when the fall is immense, and the force of the fall equal to that of tropical climates. But there are seldom above a dozen days in any year which can be considered rainy. There are in addition to those days of rain many on which occasional showers merely moisten the surface of the earth, and which by laying the dust and cooling the air are very grateful. After our heaviest falls there is this difference between the North and the South, that here the rain is no sooner over than the air is delightfully dry and bracing, while in the South it is often as wet and

* Some portions of the following pages have already appeared in an article I wrote for the *Edinburgh Medical Journal* of November 1869.

disagreeable after the rain is over as while it lasts. After a heavy fall we can generally count on two or three weeks of cloudless weather such as are seldom seen in England. In this respect our climate is exceptionally fine. I have spoken of cloudless skies, and we have weeks of such weather. But we have also much fine weather with clouds. These, however, are so high, so light and fleecy, and the clear atmosphere is seen beyond so distinctly, that they do not, to an Englishman's mind, suggest clouds. These sky clouds are infinitely fashioned and coloured, and their exquisite beauty redeems from utter tameness a portion of country which, without them and the bright sky, would, in more senses than one, be extremely flat.

During the summer months the south-west wind prevails, but every now and again a cool breeze from the north delights us by its cooling influence. Throughout the summer months the evenings, with very rare exceptions, are cool and pleasant. It is seldom one is unable to sleep at night in consequence of the air being oppressive, and this one fact accounts to a considerable extent for the rapid recovery from disease, and restoration to strength, which are our usual experience.

Winter of Southern Manchuria.—The winter is very severe. It may be said to begin with November and end with March, although thin ice may often be seen before and after these dates; but where ice is so common, a thin layer on a pond is thought little of. Besides, the weather during a great portion of November and March is often quite warm during the day, and only a little cold at night. For several months the thermometer registers several degrees below freezing point; for two months very much below that, and for several days the mercury is from 4° to 10° below zero (F.) These degrees of cold do not last throughout the 24 hours. Generally speaking, even in the coldest weather, if exposed at mid-day to the full effect of the sun, the thermometer is not many degrees below 32° F. In the shade and within doors, however, the cold is considerably greater. Englishmen are astonished to find that they do not suffer much from the winter, though so much more severe than that they were accustomed to at home. They find that, unless when exposed to the strong north wind, which sometimes blows with great force during the winter, or when making long and slow journeys on horseback, they do not require to dress much more warmly than at home. On the other hand, it is exceptional to hear people complain of feeling cold. The system is so stimulated by the bracing air that gentle exercise is sufficient to maintain out of doors a grateful warmth.

Spring and Autumn.—The months of April and May may be said to belong to spring, while the latter half of September and the whole of October constitute autumn. The spring weather is exceptionally variable in its character. One day feels as cold as any in the depth of winter, whereas the next may be so warm that it is necessary to lay aside a fur cap worn the day before, to be replaced by one of the well-known helmets. The autumn weather is perhaps the finest in the whole year. The mornings and evenings are slightly cold, but there are fewer of those very sudden changes so common in the spring. For all kinds of out-door exercise the autumn months are the best.

Of the climate generally it may be said that it is remarkably dry, that it is subject to very sudden and severe changes of temperature, that winds prevail to a great extent, and that they change their direction in a wonderfully short time. It is a common thing to see a boat sailing with a strong south-west wind, when in a moment the wind chops round to the north-east and blows as vigorously in the new as in the original direction. I have had twice the mast of my boat broken when sailing in the river from these sudden changes. They are the fruitful cause of many accidents.

The Climate in relation to Health.—For healthy people with strong constitutions the climate of this port and district is almost unsurpassed. There are few places where a strong and healthy man, free from hereditary taint, and who simply exercises common sense in protecting himself against the vicissitudes of climate, is less likely to contract disease. There are few places where a strong and sensible man is more likely to enjoy immunity from the many lesser ailments which so often annoy residents in moist climates.

There are indeed drawbacks to the bright side of this picture, but these have scarcely any relation to the climate, although they have a distinct one to health. Life here, compared with that in the large ports, is slow, and the strong and vigorous resident chafes that he has not a sufficient amount of work on which to expend his redundant energies. Vitality is so strong that, unless well exercised, it gives rise to nervousness

of a most painful nature. This is especially felt in the winter time, and the more so if the preceding summer and autumn have been unusually dry. Under these circumstances it is no uncommon thing to find an apparently healthy man suffering from extreme nervous irritability. It is difficult for such a person to read even a novel. He cannot apply his mind to the story. The slightest noise from a piece of coal falling from the fireplace, or the creak of a door, affects him like a shock from an electric machine. He is conscious, as it were, of every limb and organ. His fingers ache; his heart beats tumultuously; he cannot sleep, or if he does, he is suddenly awakened by some terrible fear, the creation of his excited brain. *When a man first experiences* these sensations he is in great distress. He fears he is losing control of his senses; and the relief is great when a fall of snow or rain occurs, and all these miserable sensations vanish as if by magic. The intense dryness of the winter climate is no doubt the cause of much of this. People gradually get accustomed to the climate, and the nervous sensations become less urgent every year. Hard work dispels them, and they disappear during a trip into the interior, where the monotony of life is broken and the interest of travelling among fine hills and beautiful scenery is a grateful change after living for months or years in the plain on which our port town is situated.

The Climate in relation to Disease.—The frequent winds which prevail, there is no doubt, are a great blessing to the resident. By the simple process of dilution they disinfect the foul emanations from drains, manure heaps, and graves much more thoroughly than any artificial means could do. It is the exception when we have a day without a certain amount of wind, and every week we have a day or days when the wind blows with great force. It thus occurs that unwholesome gases, noisome smells, and disease germs are diluted and blown away, and thus rendered harmless or nearly so. But for these winds the gross filth which prevails here, and which the extreme cold of winter encourages among the natives, must have made this port very unhealthy. The houses are, with rare exceptions, built without any regard to health; the floors rest on the ground, and when any drainage is attempted at all it is of the rudest and most imperfect character. All kinds of filth surround the houses, and stagnant pools exist everywhere. These conditions of course favour epidemics, and when they occur, as they sometimes do, the mortality is very great. There has, however, been only one epidemic of cholera since Europeans came to this port, and that occurred before my arrival. Then the natives died in fearful numbers, but since my arrival (six years ago) there have been no epidemics, although small-pox has prevailed to a terrible extent. It is never absent. Scarlet fever and measles occur every year, generally about the end of winter or beginning of spring. From all these fevers a great many Chinese die. There have been no deaths among Europeans from these diseases, although there have been cases of small-pox, and both children and adults have suffered from measles and scarlatina. The climate is no doubt a good one for the limitation of contagious diseases, otherwise the mortality would be far higher than it actually is. It is impossible, even in the worst cases of small-pox, for example, to prevail on the natives to separate the patient from the other members of the family. Of course it is often difficult to do so from the little house accommodation they have at their disposal. But even where this excuse does not exist, it is next to *impossible to ensure that isolation which* is always attempted when the disease occurs in European practice. What is true of small-pox is true of every other infectious disease. No special attention is paid to separation.

The climate is a trying one for two classes of disease—pulmonary and cardiac. The former, in more or less slight forms, occurs very generally all the year round, while all but the strongest and most careful suffer in the winter months from slight attacks of sore throat, bronchitis and similar ailments. If the patient is strong the attack is acute and soon over. If, on the other hand, he be weak the most careful treatment is sometimes altogether fruitless in preventing a slight attack of bronchitis or pneumonia from developing into a serious *case of phthisis. The cardiac class of disease* is also a difficult one to treat successfully here. The pulse is quickened by the stimulant action of the climate, and aneurism and valvular disease should, when possible, be treated elsewhere.

While, then, the climate of this district is specially unfavourable to the successful treatment of pulmonary and cardiac diseases, all other diseases are as likely to have a favourable termination here as

at any other place with which I am acquainted. The diseases which are most common are the various skin diseases, ophthalmia, small-pox, scarlet fever, measles, diarrhœa, all kinds of intestinal worms, and a low kind of fever, like typhus, but which, unlike typhus, has no certain course. Comparatively few deaths from disease have occurred here in the adult European population. A considerable number of people have been accidentally drowned. Two deaths have occurred from exhaustion, one from typhus fever, one from a tumour in the brain, one from aneurism, one from dysentery, one from phthisis, and a few others from causes not certainly determined. In two of the deaths mentioned above—those from typhus fever and dysentery,—the patients were addicted to strong drink, and the former was not seen until he was comatose and treatment was hopeless, while the latter was not seen until his strength was utterly exhausted from disease.

Several children have died: two infants a few days old, two children about a year old and one (a delicate twin) about three years old.

Here I would remark that the climate is most trying for infants and young children. Nothing but strong constitutions and constant care will enable European children to live without injury to health through the cold winters.

Having said all that there is to be said against the climate in relation to disease, I should add that the oldest European residents are the strongest and healthiest in the settlement. These came with good constitutions, and in every instance where this has been the case there has been no deterioration of health, but generally the opposite. It would be difficult to find anywhere finer specimens of the animal man than we have here, and of these there are several. To sum up all I have to say on this subject in a single sentence: there are few places where a healthy constitution, intelligently cared for, is more likely to enjoy good health than here, while, on the other hand, there are few places more likely rapidly to destroy life when the constitution is weak, in which there is hereditary taint, and where the utmost care is not bestowed on it.

Prevention of Disease.—With extremes of climate such as we have here, it is obvious that to secure health and prevent disease there are certain conditions which must be attended to. Good and sufficient food and clothing are necessary, and no less so are properly built, pleasantly ventilated and comfortably heated houses.

However obvious these truths may seem, they have not invariably been attended to. It is a common thing to find people going about with clothing which would not be too warm with the thermometer at freezing point, but which with the thermometer but little above zero is absurdly insufficient. The houses, too, are sometimes over-heated, but this is easily rectified. It is more serious when they are not sufficiently warmed. There is no excuse for a house being cold if built on sensible principles, and if the American stove be used, as it certainly always should be in preference to the extravagant but poorly heating English fireplace. Strong adults may be able without apparent injury to live with insufficient clothing and improperly heated houses, but children and delicate people cannot. They suffer, and that very terribly. Either acute disease attacks and kills them, or the seeds of chronic ailments are sown which will one day make their lives a burden. Here we all pay too little attention to clothing and warmth in our winter weather, because so stimulating is our climate that we do not *feel* the cold, which, however, certainly finds out and attacks its weak victims. All houses should be built in this district to face the south, as the Chinese houses are. They thus get the cool winds in summer and the warmth of the sun's rays in winter. In addition, all houses should be built on ground raised some four feet above the enclosing compound, and the floors should be raised at least two feet above the raised ground. This has been generally neglected. If this were not a dry climate, rheumatism must have been very prevalent from the general way in which the floor of a room is placed directly on the mud. As it is, it accounts for a good deal of the rheumatism and neuralgia which exist here during wet weather.

The first of the appended tables is copied from Mr. Meadows's Trade Report for 1865. It is a table of extreme temperatures, the result of five years' observation of this climate. The extreme temperatures are

really the important ones to know. They alone enable us to appreciate what we have to endure and what we have to prepare for. Average temperatures are simply misleading, and very often seriously so. Certainly misleading if the extreme temperatures are not given.

TABLE of EXTREME TEMPERATURES, the Result of Five Years' Observation of this Climate. (The Observations were taken from Fahrenheit Thermometers suspended on the Northern Faces of Stone Walls.)

MONTHS.	COLDEST.		WARMEST.	
	Morning at Daybreak.	Afternoon, 2 to 4 p.m.	Morning at Daybreak.	Afternoon, 2 to 4 p.m.
	°	°	°	°
January	−10	3	39	44
February	−10	7	35	50
March	0	14	43	60
April	27	41	53	68
May	41	52	65	74
June	57	70	76	84
July	62	74	79	87
August	63	73	77	85
September	41	52	73	80
October	28	42	66	71
November	9	17	52	61
December	− 6	2	37	44

In addition to the preceding, I add a table of the coldest temperatures for the last three months of 1870 and the first three months of 1871. The observations were made with instruments by the same makers and in the same manner as in the above table.

MONTHS.	COLDEST during the 24 Hours.	REMARKS.
1870.	°	The winter months were unusually cold. We had on several occasions a succession of three, four and five days when the thermometer went below zero. During these our coldest days, there was little or no wind, and as a consequence the winter, although an exceptionally cold one, was not *felt* to be so. In many respects it was a very pleasant winter. The air was delightfully clear, and the three or four showers of snow which occurred had a considerable effect in preventing local duststorms, besides moderating the stimulant character of the climate.
October	28	
November	15	
December	− 7	
1871.		
January	−10	
February	− 6	
March	5	

D.—Dr. George Shearer's Report on Leprosy at Hankow.

During my last two years residence in Hankow I have seen in all 121 cases of anæsthesia and 73 of leprosy.

As I think it demonstrable that the former is but the incipient stage of leprosy, I shall first speak of the anæsthesia cases.

There were 9 cases of numbness of both hands; 2 of the right hand only, with imperfect control of the same; 2 of the thumbs and inner fingers; 3 of the left hand; 1 of left arm and left side; 3 of the arms and hands; 6 following the distribution of the left ulnar nerve, with pain; 1 of right hand and forearm for a period of 10 years, with partial paralysis of the same for a period of one year; 4 of hands, arms and face,—the face is now bronzed, quite destitute of sensibility, and bereft of the eyelashes and eyebrows; 1 of numbness of hands and feet for a period of 13 years, with rheumatic pains in the extremities. The hair is dropping out, but there is neither ulceration nor eruption. There is nervous twitching and retraction of the left corner of the mouth and of the left eyelid, the sight of the left eye being impaired. There was 1 case of numbness of hands and feet for a period of one year.

Anæsthesia of the *trunk* following rheumatism, 4; of the *arms*, 5; of the *feet and legs*, 9; with rheumatic pains, 6; of the *thighs and legs*, 4; of *thighs and hips*, 17; of the *shoulder*, 2; of *face, hands and feet*, 5; of *big toe*, 1; of *calf*, 1; of the *soles of the feet*, 1; of the *arms, with wasting*, 2; of *half of scalp*, 2; intensifying numbness with debility (age 63), 2; of the *arms and legs*, with *dragging of the mouth and eyelids to one side*, 1; of the *feet, with loss of power*, 4; *ma-mung* in patches, 4; of the *side of the foot*, with pains in the elbows and soles, 1; of the *feet* with temporary lameness, 1; numbness, pain and debility in *leg*, 1; numbness of *inner aspect of hands*, with weakness, 6; numbness and paralysis of *leg*, 2.

A boy, aged 18, had numbness of feet and face, with dropping of the hair and scaly eruption; 2 cases of *ma-mung* irregular and scattered, with scaly eruption, were cured by arsenic: 4 had numbness in irregular patches; 1 had intermittent *ma-mung; ma-mung* of thighs, hips, legs and feet, affecting specially the extensor surfaces; *ma-mung* of right cheek, with ptosis of right upper eyelid and paralysis of right buccinator. Two years before, the last patient had an insensitive spot on the abdomen, which, however, recovered its sensibility.

Contraction of the fingers of left hand with numbness of a spot on right thigh. Numbness with erythematous blush over the affected skin of foot.

Young man, aged 25, with numb spot (3 inches square) on front of thigh for five years. Numbness of right foot and leg for two months. For 12 months has suffered from recurring attacks of ague.

Man, aged 50, numbness of both legs and feet for six years. Toes like small puddings, with extensive ulceration and burrowing holes. Health good.

The ages ranged from 18 to 63. The patients were mostly of the male sex. The anæsthesia varied in degree from a preliminary loss of delicacy of perception of tactile impressions up to absolute loss of sensibility in the affected parts. These never perspired. In 10 cases sensory was combined with motor paralysis, and in 2 cases with paralysis of the facial nerves.

Where both motory and sensory paralysis are observed in the same subject they are associated, and hardly ever separately affect distantly related parts; from which it may be inferred that both lesions originate in some mischief affecting *the roots of the nerves*.

Every part of the general integument appears to be liable to the loss of sensibility, the skin of the hands and feet pre-eminently so, and of all nerves, specially the *ulnar*. The inference is that the operating cause of the anæsthesia is to be found where the nerves issue from the spinal cord and unite their sensory and motor strands together.

It will be seen from the researches of DANIELSSEN that a morbid deposit is in point of fact invariably to be found in the internal organs of leprous subjects, that it specially affects the nervous system, assumes the form of chronic neuritis, is symmetrical, and prefers certain nerves to others—the sensory rather than the motor.

Of the above cases, anæsthesia pure and simple was observed in some cases to have existed for a period of five years, but there is no case amongst them where the anæsthesia having lasted for a period of 10 years was not accompanied by wasting, paralysis and ulceration. These, in fact, constitute the connecting link with cases of true leprosy, of which I will now speak.

1.—Aged 30. Suffering from numbness of inner and ring fingers of left hand, and thighs, with dropping out of the eyebrows and hair. Duration one year. A boatman.

2.—Numbness for three years of arms, legs and abdomen.

3.—Numbness of fore, middle and ring fingers, with sharp pains in shoulder and arm.

4.—Numbness and ulceration of foot.

5.—A fisherman, aged 40, for one year, highly anæmic. Hands and feet numb, hair and eyebrows dropping.

6.—*Ma-mung*, *i.e.* numbness, of patch on thigh, with falling out of the hair, three years.

7.—Leper, aged 38, but looks 50 at least, with ulcers, anæsthesia and dropsical legs.

8.—Leper. Feet and hands numb, perforating ulcer of sole.

9.—Numbness for eight years, sometimes better, sometimes worse, of hands and arms. Eyebrows gone. Cannot wash himself or use his hands. Cannot account for the numbness.

10.—Agriculturist. Numbness of little and ring fingers of left hand, also of a patch on the inside of right and left thighs, with weakness and pain in the knees.

11.—*Ma-mung* of hands, feet and face, numbness in patches over body, hair dropping out.

12.—Field labourer, aged 23. Observed the eyebrows thickened, itching and numb for a period of six months, then the hair began to drop away; the middle finger is numb, and there are numb patches on the right thigh and left ham.

13.—Leper, aged 50. Disease began with itching, then scurf, numbness and tubercles. Face broadening, leonising. The numbness in the hands is exactly limited to the distribution of the ulnar nerve, and there is some degree of paralysis of the muscles of the mouth.

14.—Numbness of the hands, with dropping of the eyebrows and hair. A woman.

15.—*Bad case of leprosy, with enlarged glands in the groin.*

16.—Case of leprosy, beginning with tubercular eruption.

17.—Countryman, aged 49. *Ma-mung* for nine months of feet and face. Face covered with bronze and itching eruption; eyebrows and hair dropping.

18.—Numbness of shoulders and feet (aged 36), along with weakness and pain in the joints. Affected one year with dropping of the hair.

19.—Numbness of the hands and feet for a period of five years. Dryness and cracking of the hands and feet, with *scurfiness of the surface*. Papular eruption of the face, with flattening and broadening of the features. The man is pockpitted.

20.—Numbness of the feet, hands and face, with scurfy eruption.

21.—Leprosy ulcers. Healed rapidly after slight salivation with mercury, followed by a course of liquor arsenicalis.

22.—Leper, aged 55, with complete insensibility of the hands and feet.

23.—Incipient leprosy in a young man aged 21, of one year's standing; commencing with numbness it has now reached the stage of entire insensibility of the hands, feet and face. Face becoming carnified and wrists thickened. Brother affected with *ma-mung*.

24.—Anæsthetic leprosy. The general surface presents a number of bronzed reddish patches, with tuberculated, encrusted spots on arms, legs and face. The eyes are ferrety.

25.—Incipient leprosy in a man aged 35. Numbness of feet and legs, with pain; right hand numb, wasted and without strength.

26.—Incipient leprosy in a man aged 50. He is strong and hale, but for five years his face and arms have been numb, and they are now quite destitute of sensibility. The face is bronzed. Eyebrows and eyelashes gone.

27.—Leper, with a general eruption of white shining scales.

28.—Leper, with swollen, numb face; nine months affected. Knotted, firm, internal jugulars.

29.—Leper, aged 40. For six years the face has been numb and leonised; the hands, arms and legs afterwards numb, with dropping of the eyelashes and eyebrows.

30.—Leper, aged 50, with perforating ulcer of the sole and dropsical swelling of the foot; the ulcer healing and the swelling subsiding under arsenic.

31.—Another similar to the above.

32.—Leper, aged 35; five years a victim. The feet are numb, there is a large fetid ulcer on the sole of the right foot, and slight paralysis of the face, eye and mouth.

33.—Leper, aged 19. Deep perforating ulcer of heel and toe of the right foot, reaching to the bone and punched-out looking. Foot, instep and ancle numb; skin of knee ditto, also along the course of the ulnar nerves. The insensibility preceded the ulceration.

34.—Leper, aged 39, of three years standing. Two toes have dropped away, and there are two large fetid ulcers on the sole of the foot, which is numb, while the leg itself is wasted and trembles as in trembling palsy. There is numbness also of the right hand. Otherwise in good health.

35.—Leper, aged 28, of two years standing. Eyebrows and eyelashes gone, hair falling out. *Ma-mung* of hands, arms and parts of the body and face. Eyes ferrety, with arcus senilis. Face tuberculated and bronzed.

36.—Agricultural labourer, aged 34, suffering for two years. Has no relatives similarly affected. There is a fetid ulcer of the sole of the left foot, and the interossei muscles and ball of the little finger are much wasted. The numbness began in the hands, and there are benumbed patches all over the trunk, but the face is free and the hair intact.

37.—Man, aged 35. Complains of numbness without itching of the general surface of the body and extremities for three years past, and growing worse. Eyebrows and hair dropped. It is not inherited. The neighbourhood he lives in is regularly flooded year by year. There are three other lepers in the village.

38.—Field hand, aged 47. *Ma-mung* of hands, face and feet for one year, together with debility following attacks of ague and dysentery. Not inherited. No dropping of the hair as yet. His place annually flooded.

39.—Field hand, aged 27. *Ma-mung* of hands and feet, itching of the scalp and eyebrows, with partial dropping of the hair and debility. Not inherited. Has had rheumatism but neither ague nor dysentery. Place annually flooded.

40.—Boatman, aged 52. Leprous for three years. A horribly repulsive sight. The man's features seem cast in bronze, with saffron-coloured eyes. Face, hands and feet numb, the cuticle of the latter granulated and the legs and thighs covered with eczema.

41.—Man, aged 42, a leather-dealer. Complaining for six months past of numbness of the hands and feet, with an itching, numb patch round the umbilicus, and another on the face. Reddened tubercles forming on the arms.

42.—Young man, aged 24, suffering for six years from anæsthesia of the hands and feet, and for four years from perforating ulcers at corresponding points of the outer borders of both feet, near the root of the little toe. The muscular ball of flesh at the outer border of the right hand is wasted and numb.

43.—Leper, aged 27. General anæsthesia, with scurfy, eczematous eruption over the body and deep circular ulcer of the sole, set as it were in a ring of thickened cuticle. Right hand crippled; left toes gone. He is a field labourer, and has been affected in this way for four years. Breath foul and

offensive, with a mercurial fœtor. The numbness began in a spot over the left elbow, along with which the scaly eruption made its appearance.

44.—Young man, aged 18, affected with *ma-mung* for five years. Complete insensibility of the thighs, legs and feet, as also of the two inner fingers of either hand, supplied by the ulnar nerve. Face numb, skin of legs dry and unperspiring, in scaly plaits. Legs weak, eyebrows and hair beginning to drop. His grandfather had been affected with anæsthesia, but got cured of it. Father, mother and other relatives quite free from it. Says there are a number of lepers in his village. Anæsthesia reported as improving under the arsenical treatment.

45.—A woman, who also works in the fields, affected with numbness of the left leg and arm, inner fingers of the left hand, and left side of the scalp, which is both numb and painful. She has been affected thus for a year. Hair dropping out. Skin free from rash or ulcer, but dry, rough and unperspiring in the benumbed parts.

46.—Leper, aged 40; a field hand. Complains of numbness of the hands and feet; face numb and fleshy, with falling out of the hair and eyebrows. There is thickening and hardening of the skin of the soles, with linear ulceration scoring them across.

47.—Young man, aged 23, for 10 months affected with symptoms of leprosy. There is *ma-mung* of the feet and legs, of the face and inner aspect of the forearms, and little and ring fingers, following the distribution of the ulnar nerve. The face is bronzing and with the neck becoming full of erythematous tubercles. The skin on the back is becoming marked in a mosaic of white spots on a dark ground, without scale, eruption or change of texture in the skin, a kind of marbling of the skin in different colours. He ploughs and sows the fields in a wet, marshy district.

48.—Farm labourer, aged 52, affected for a year with numbness of the feet and legs, hands and arms, face and ears. The insensibility is complete, and there is deep-seated aching in the bones. There is an eruption of broad, thin scales of cuticle on the legs, but no ulcers; skin harsh and unperspiring; no tubercles or eruption. There are nervous twitchings of the face, and mercurial fœtor of the breath.

49.—Field labourer, aged 40; for three years affected with *ma-mung* of the extremities and face. He defines *ma-mung* as an itching of the skin when he is warm and a painful condition of the same when cold, with a degree of numbness. The skin of the whole body is affected, but that of the feet and legs is worse, being insensible to pinching. The eyelashes and eyebrows, together with a portion of the "tail," have dropped. There are no ulcers, neither is there any rash, but a dry, harsh state of the cuticle, which coheres in large flakes on the leg. In the morning, when he first gets up, there is pain in the soles of the feet, but after walking about for a while this goes away. A pure case of anæsthetic leprosy.

50.—Field labourer, aged 42, a leper, with immense fetid ulcers of the soles of the feet and big toes, the skin being enormously thickened around the edges of the same. Hands totally maimed and fingers mostly dropped off. Yet in this case the hair and eyebrows have not dropped, and there is no thickening or other alteration of the features. He has been afflicted for 14 years. Testes atrophied and soft. Ancles and insteps enormously engorged and thickened. There is a large circular patch on the back destitute of sensibility and power to perspire, and covered with thin, flattened scales.

51.—Man, aged 27, suffering for four years from symptoms of leprosy. There is carnification, numbness and itching of the features, and dropping of the hair and eyebrows. He seems 40 at least. He has a heavy oppressed look and a remarkable hebetude of expression. There is a type other than this, where a leonine expression arises from the spreading equally over the features of the fleshy or carnifying substance, giving at once brawniness and breadth. This man's place is regularly flooded year by year. He slept on the wet ground one day and rose up with a chill. Three months afterwards he observed the eyebrows drop, and then the numbness of the extremities set in.

52.—Leper, aged 43, looks like a man of 60, afflicted for the last 12 years with numbness of the hands and feet. Lives at Huang-p'i, distant 70 li from Hankow. His legs and the soles of his feet are horribly ulcerated; the ulcers are of three years standing. Eyebrows, eyelashes and hair of the head fallen off

within the last five years. The numbness began in two corresponding circumscribed spots on the knees, which gradually extended to the toes. The testicles have wasted in a very marked manner.

53.—Carpenter, aged 58. Mahogany-coloured tubercular swellings of the arms and chest for a fortnight past, attended with heat, itching, numbness and some pain. On the buttocks and left arm the tubercles have coalesced into a general fleshy swelling of a dusky purple colour, and the use of the arm is impaired. This is the first and only case I know of which appears to have originated in Hankow.

54.—A sailor, living in a country district 120 li distant from Hankow, subject to annual floods. Afflicted with numbness for five or six years past in the feet and legs, which never perspire, though the arms and body do. There is numbness also in patches of the general surface, the skin in these situations being of a deep vermilion tint and covered by a thin, dry, scaly eruption. The thickened cuticle has given way in holes on the right sole, and corn-like masses are forming on the other sole. The thumb and two inner fingers of the left hand are numb, while the sensibility of the little and ring fingers is unimpaired. The accurate manner in which the numbness is marked off is singular. Nose tinged deeply purple, and numb.

55.—A man from Kiangsi, aged 39. Has had *ma-mung* of the feet and legs and of middle fingers of both hands for a year and more. Face hot and itching, with evidently increased action of the blood vessels; parts also a little insensitive. Hair and eyebrows dropping out. Face bronzed, heavy and fleshy, and small copper-coloured tubercles forming in the neck. Eyes reddened and congested. There is nervous twitching of the mouth, and he cannot whistle while the mouth is contorted in the attempt (facial paralysis). He has worked in the fields for 15 years.

56.—Leper, aged 35, a victim for 13 years. Numbness and total insensibility of the hands, which are lamed and crippled and the tendons contracted. Face insensitive, lower eyelids everted and inability to close the eyelids by a space of half an inch (paralysis of seventh pair). Buccinator paralysed; mouth twisted to one side; raised red blotches on the skin; eyes ferrety and injected.

57.—Incipient leprosy, man aged 50. Strong and hale, but for five years hands, arms and face numb, now quite destitute of feeling; face bronzed; eyebrows and eyelashes gone.

58.—Leper, aged 37. Subject to numbness of arms and hands, legs, feet and face for a year and a half, which parts never perspire. He is partially bald and the eyebrows are gone. On the affected parts the skin is dry, shrunken and shrivelled, while that of the face is reddened, bronzed and thickened. As yet there is no paralysis of face or limb, though he is too weak to follow the plough.

59.—Leper, aged 20, with anæsthesia, thickening and ulceration of the skin of the feet, and contraction of the tendons. No eruption; no tubercle.

60.—Incipient leprosy of five months duration.

61.—Leper for seven years. There are tubercles on the neck, psoriasis and pink discolorations of the skin, face broadening and textures thickening and coarse. The eyes have a lurid glare. Eyesight impaired. There is numbness of the hip.

62.—Field labourer. Affected for five years past with numbness of the hands and feet, legs and shoulders, with general itching of the surface, carnification of the countenance, falling out of the hair, eyebrows and eyelashes, pearly white circular scaly eruption on the neck, double chain of enlarged glands in the groins, numerous marks of old cicatrices but no history of syphilis.

63.—Leper, boy aged 16, squat, square and ill-developed; testicles undescended, large ulcer on the legs, no eyebrows, bridge of nose sunk, face leonine and brawny, white scaly eruption on the neck. Numbness of the hands and feet, no itching, no tumours or tumefaction in the neck nor enlarged glands in the groin. *Father a leper.* Ulcers healed up under arsenic and astringent dressings, but within three months broke out afresh.

64.—Leper. Face leonine and brawny, eyelashes gone, eyes ferrety, rupia-like spots on the legs, gouty enlargement of the joints of left hand.

65.—Leper. Corneæ undergoing granular degeneration; conjunctivæ and sclerotica injected.

66.—Leper, aged 31; three years a victim. Eyebrows and eyelashes gone. Curious punched-out looking ulcers on the soles, with enormously thickened cuticular edges. Great toe broadened and ulcerated. Face converted into a species of brawn. Left leg numb and marked with coloured spots—the sites of *old ulcers.*

67.—Leper; five years a victim. Perforating fetid ulcers and insensibility of the soles of the feet. Imperfect action of the lips and eyelids.

68.—Leper, aged 30, four years ill, arcus senilis well developed. Feet and toes ulcerated, hands maimed, feet bronzed, general anæsthesia of the parts affected.

69.—Leper, with ulcerated hand, and fingers shrivelled, contracted and bent inward on the palm like eagle's claws. *Ma-mung of hands and feet and paralysis of the motor nerves of the face.*

70.—Leper, a lad aged 25, affected for a period of seven years. Hands, feet and face numb. Tissues thickened and bronzed; little finger of right hand dropped off, also distal phalanx of ring finger of left hand. The fingers taper and thin off at the tips, presenting in this respect a marked contrast to the clubbed finger tips of phthisical patients. There is undoubtedly atrophy of the bulb and other textures of the fingers. Complains of numbness or imperfect *wooden* feeling in all the affected parts, which are also subject to itching sensations. *Joints of both hands scarred (from burns) and rigidly flexed. Hair of eyebrows dropped;* imperfect closure of left eye and dragging of the mouth to right side. Scrotum, like the face, numb. Absence of hair from pubes. Testicles sound. No trace of venereal disease. Two ulcers, one in either palm, produced by pressure of the plough handles on the insensible textures.

71.—Leper; four years a victim. Deep dormant fetid ulcers in the sole of right foot, with thick coriaceous edges; thickening of the tissues on the dorsum of the foot, with bronzing, scaly scurf and numbness. Left hand crippled and withered as if from palsy. Every joint stiff as if anchylosed, and marked with white cicatrices indicating old ulceration. 17 years ago the hand become ulcerated and crippled from spontaneous ulceration accompanied by anæsthesia, and it has never since recovered its normal condition. Otherwise he continued well till four years ago, when *numbness* was felt at the tip of the great toe, and a blister formed which broke and deepened into an ulcer. In the meantime he had removed from a more elevated and drier locality to Whampi, a low level plain to the north of Hankow, where he originally resided and had become first affected with leprous symptoms. The numbness and thickening of tissue extended at length from the toe to the knee. This case shows:—1°. That Leprosy begins with anæsthesia and is followed by defective nutrition and loss of power in the parts concerned. 2°. Its progress is sometimes *spontaneously* arrested, as in this case for 13 years. 3°. The arrest appears to have depended upon his removal from a marshy locality to a higher and drier neighbourhood.

72.—Incipient leprosy in a man aged 27. Numbness and eruption on the legs and arms for a period of two years. The eruption resembles psoriasis guttata, rounded spots covered with an aggregation of white scales and revealing when removed a silvery basis. When cured a dark discoloured spot remains. Eyelashes and eyebrows gone. Great loss of power in the arms and hands, and the parts affected with numbness never perspire. No trace of syphilis. The eruption is disposed in elegant curved lines and concentric circles of geometrical exactness.

73.—Leprosy; an agricultural labourer 31 years old. When 10 years old had a sort of white scaly eruption which left rupia-like marks on the hips, the affected parts being numb. When 14 years old the right hand became crippled, when 21 the left. The flexor tendons in the forearms are tense, and the muscular substance wasted up to the middle of the arm, where the muscular volume is sharply resumed. Palmar fasciæ tense. Finger bulbs atrophied and flexed rigidly on the palm. Patches of leprous mahogany-coloured redness with minute chaffy scales on the surfaces of either forearm. Legs and feet, hands and arms numb. Face numb in patches. He cannot completely shut the left eye. Sensation diminished although not quite lost in the parts affected. General health good. 10 or 12 cases of leprosy said to exist in the same village.

74.—Young man, aged 31, a leper. Painful sensations in the joints of the hands and feet, with partial anæsthesia of the hands and arms, feet and legs. Anæsthesia complete in the little and ring fingers.

of either hand, following the distribution of the ulnar nerve. From elbows to finger tips and from knees to toes, that is, the whole of the parts affected, are dry, scurfy and non-perspiring. The skin of the face is beginning to swell and redden in patches, without numbness but with much itching, and the hair of the eyebrows and head is beginning to drop. Has never had syphilis. Does mason's work, but is also occupied at the proper seasons in ploughing and sowing. No eruption, but the anæsthesia and loss of hair are proceeding rapidly, he being only one year affected. There is sluggishness in the opening and closing of the eyes and in the action of the muscles of the mouth, with nervous tremors of the muscles themselves when called into action.

Observation *A*.—The whole of the foregoing cases were seen within a period of 12 months at Hankow. During a seven months' residence in Kiukiang, which enjoys a hilly situation and is seldom subject to inundations, not a single case has been seen.

B.—Of the whole number only one properly belongs to Hankow and appears to have originated there, yet Hankow is notoriously subject to inundations. The immunity of the inhabitants of Hankow at once from ague and leprosy probably depends upon the sandy nature of the sub-soil on which the city is built, and which allows of a ready drainage and quick drying after floods and rainfalls. On the other hand, the stiff, tenacious clay of the outlying and surrounding districts retains the water on the surface in impermeable ponds and pools, in which both animal and vegetable life abounds, until the solar evaporation has converted the whole into a semi-fluid, festering mass of decay, the very hot-bed of malaria. My experience at the hospital in Hankow leads me to say that the ague cases, equally with the leprosy cases, were *imported*, and that to the best of my knowledge they were principally drawn from *necessarily malarious localities, i.e.*, where there is no natural drainage.

C.—Of the anæsthetic cases not more than 10 or 12 were women, and of the lepers only two. The vast majority of those afflicted followed one and the same occupation, viz., that of *agricultural labour*, in which they are necessarily exposed to the exhalations of the wet undrained soil in a degree far beyond any other class of residents in the same locality.

D.—The whole of the foregoing cases may be conveniently arranged into three groups :—

1°. Cases of simple anæsthesia, *ma-mung* or impairment of nervous sensibility in a part or parts of the body.

2°. Cases of anæsthetic leprosy, where the loss of sensibility is attended by eruption (pityriasis, psoriasis) or wasting and shrivelling of the skin and sweat glands (hence the unperspirable condition of the affected parts), and ultimately by decadence of the hair, eyebrows and eyelashes. Along with the external numbness there may or may not be internal and accompanying pain in the limbs, and when ulceration takes place, from improper contact with bodies, through lack of the warning protection afforded by the perfect sense of touch, the ulcers are comparatively *easily healed*. Contractions and atrophy of parts ensue. Facial paralysis is a common accompaniment both of this and the next form.

3°. Cases of tubercular leprosy, where in addition to the above symptoms there is a *local morbid deposit in the affected parts*. When it occupies the subcutaneous tissues of the face and cheeks, the countenance assumes leonine breadth, a satyric stare, or seems as if cast in bronze. When under the eyebrows, the heavy, beetling brows give an expression of hebetude and oppression to the face as if the subjects of it were labouring, as in sad truth they do, under some horrible incubus which they are powerless to shake off. Carnification or tuberculisation of the lower extremities is apt to proceed to ulceration of a very peculiar description, burrowing deeply, with immense thickening of the adjoining corium—in some instances attaining a thickness of half an inch or so. Sometimes the eruption appears in detached copper-coloured tubercles, sometimes as a bronze or mahogany-coloured rash, whence the native name of *ma-mung* or spotted leprosy. Necrosis of phalanges and destruction of joints and limbs are the sequels of this form of the disease, and amongst the leper accompaniments may be mentioned swelling and pink injection of the conjunctivæ, the sense of smell becoming impaired or lost, the voice hoarse and nasal, ulceration of the mucous follicles of the throat, with exceeding foulness of the breath, resembling the mercurial fœtor. The freedom from pain

and suffering is no less remarkable than the absence of any derangement of the general health. In all, however, there is a *marked deficiency of vital energy.*

E.—Since the publication of DANIELSSEN'S researches on leprosy in Norway and Sweden, and his discovery of a peculiar morbid deposit in the internal organs and specially in the nerves of persons who had died of leprosy,* we have been furnished with a clue to the connexion of the different forms. The cases of pure anæsthesia are traceable to *leprosic deposit* on or near the roots of the sensory nerves, and the tuberculous form to local deposits in the sub-cutaneous cellular tissue. This circumstance will help to explain both the peculiar character of the ulceration and its resistance to treatment.

F.—*While we are thus able to group all the forms of this disease into one category and to say* that they seem all to depend upon one condition, viz., leprosic deposit variously situated, the question arises, whence is this diathesis or cachectic condition of the body induced? To this I think my experience allows of one answer only. A morbid condition of the blood is determined by breathing the impure air of certain malarious districts, and leprosic deposit, with all its consequences, is the result. In this respect the leprous diathesis is comparable with that of phthisis, which is remarkable for choosing two systems, the pulmonary and glandular, as the seat of deposit, rather than with the gouty and aguish diatheses, where the virus, accumulating for a period, at length explodes, as it were, in a gouty or aguish fit, allowing of a temporary, or it may be complete, return to health. And just as phthisis and gout are unknown in the same individual, so leprosy and ague rarely or never affect the same person. Leprosy is therefore truly an endemic disease, and in all probability originates in malaria.

G.—There is no proof that it is induced by diet—fish diet or other food. There is not the least proof of any connexion between leprosy and syphilis. It is not contagious.[d] The better class of Chinese and Norwegians have the most perfect confidence in immunity from the disease even where lepers abound.

* The nerve lesions traceable to leprosic deposit DANIELSSEN found in nearly every organ in the body, and especially in the nerves (the kidneys alone excepted).[e] This chronic neuritis is symmetrical, and prefers certain nerves to others, and the sensory to the motor.

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[d] This is strongly insisted on by Dr. BOWERBANK of Jamaica (Royal College of Physicians Report on Leprosy, 1867, page 13). He says:—"I do not believe it is contagious in any of its stages, nor do I believe it can be transmitted by sexual intercourse. I have known a man to live with his wife for 16 or 18 years after he had elephantiasis tuberculata, and have children by her during the time; he died in an advanced stage of the disease, but she never suffered. Two of the sons, however, were attacked. Again, I have known a man live for years with his wife, who was leprous, without his suffering."

[e] It is well to compare these statements, made on DANIELSSEN'S authority, with the recorded results of the very few postmortem examinations of leprous patients made by private practitioners. Thus at page lx of the College of Physicians Report, Mr. MACNAMARA of Mozufferpore (Bengal) says:—"I have made five postmortems upon the bodies of leprous patients, my attention being more particularly directed to the nervous system, and neither in the nerves themselves nor in the brain and spinal cord have I been able to detect any lesion either with the naked eye or by the aid of the microscope." Dr. MONGERI of Crete, Dr. DAVY of Ceylon and Mr. HUTCHINSON of Victoria have described the appearances after death, but seem to have been struck only by the excessive development of "tubercles" in the skin and serous and mucous membranes. In all three cases the larynx had specially suffered. Dr. CARTER of Bombay (R. C. P. Report, page lxii) noted the results of 16 postmortems after deaths from leprosy. "In five cases where death was attributable to chronic dysentery, kidney disease was certainly present in two, and in a third fibrinous deposit was found. * * * Enlargement and diminished opacity are the fundamental changes which the nerves exhibit. The general cellular investment, the ordinary seat of neuromatous swellings, inflammatory and other formations, is here but little altered: the amount of enlargement varies from just above the normal size (at the seat of disease; above or below it the nerve may be smaller than natural) to more than twice that; the colour may be grey, reddish grey, reddish brown or, very rarely, a dead opaque white: the consistence of all degrees from almost flabby to semi-cartilaginous, but generally firmer than natural; marked vascularity is uncommon; adhesions have been found, but only under exceptional circumstances. The cutaneous nerves are altered in a similar manner, but are sometimes less rounded and firm. These changes do not occur indiscriminately in the course of the nerves, but make their appearance at certain selected spots, for the compound trunks where they are most superficially placed, for the cutaneous nerves immediately after they have perforated the deep fascia. As regards the former, the nerve-trunk above the 'locus morbi' may be unchanged; below it is usually atrophied, but occasionally almost normal in appearance and structure: the apparent extent of disease may be limited to two or three inches, but it is often considerably more; in both sets of nerves the terminal branches will be found atrophied and pearly in aspect, being in well-marked cases evidently incapable of performing their functions."

H.—It is transmissible hereditarily, though the fact has been rarely observed, and one is liable to the fallacy of confounding the effect of the endemic influences in originating the malady with its conjectural inheritance.

I.—The disease is said to be on the increase in Jamaica during the last 12 or 15 years, because of the retrogression towards barbarism of the bulk of the population. Imperfect tillage, draining and culture of the land furnish the essential conditions for the development of the marsh poison. There is historical evidence that leprosy once prevailed extensively in districts and countries from which it, as well as ague, has now disappeared; and I believe it to be capable of demonstration that the two disappeared simultaneously through the introduction of the modern system of drainage.

J.—No. 71 is not the only case which has come under my observation of the arrest of the disease through change of residence. Of some others of a like nature the notes have been lost. Happily, however, the defect in the chain of evidence is supplied by a writer in a recent number of the *British and Foreign Medico-Chirurgical Review*, who says that the Norwegian physicians recognise the endemic nature of the disease and the fact that immigrants take it or lose it by moving to or from infected districts. Strangers may contract the disease *de novo*. It is further asserted that Norwegian lepers emigrating to America get well of the disease, and no new cases occur amongst them.

K.—Dr. BEAUPERTHEY of Trinidad has established a very successful method of treating leprosy in that island, of which the following are the leading principles. A nourishing diet, with fresh meat and light wine twice a day,—salt fish, beef and pork being prohibited entirely. Corrosive sublimate in doses of $\frac{1}{15}$th of a grain is administered twice a day, and inunction of the whole body with oil of cashen or cocoanut is practised night and morning. The most important part of the system, however, consists in the *removal of the patients from the neighbourhood of marshes.* The results are satisfactory; the tubercles are entirely removed; the sensibility and power of movement in the paralysed limbs are restored, and the general health is improved.

L.—Until, therefore, the appliances of modern skill in the interest alike of agriculture and the public health are called into requisition, of which there is certainly but a very distant prospect at present, we cannot attack the evil at its source, or hope to do more than mitigate suffering and effect the cure of a certain number of cases. But this should by all means be attempted. And there surely cannot be much difficulty in finding amongst the upper ports of the river a suitable locality for the establishment of a sanitarium or lazaretto.

E.—Dr. GEORGE BARTON's Report on the Health of Shanghai for the Half-year ended 31st March 1871.

IN drawing up a Report on the general health of Shanghai for the six months ended 31st March, being the winter months, there is less matter of interest, in a medical point of view, than in the summer months. The diseases most prevalent in Shanghai attain their maximum in the summer months. The winter of Shanghai may compare favourably with that of any part of the world, the dry bracing air then experienced being in an eminent degree conducive to health. The general sanitary condition of Shanghai has improved much of late years, owing to the more perfect system of drainage carrying off surface impurities; and in my opinion the healthiness of Shanghai is in a great measure owing to the absence of water-closets in the dwelling-houses, which in England are a fruitful source of disease, such as typhus and scarlatina, etc. The remarkable absence of those diseases both at Shanghai and Hongkong is worthy of note. Gases with offensive odours, such as sulphuretted and carburetted hydrogen, if given off in the open air are not so injurious to health as when escaping from sewers. China is *par excellence* the country of bad smells, yet the people do not seem to suffer from them, but, on the contrary, rather like them.

The health of the foreign community in Shanghai during the past year has been exceptionally good, the only deviation having been an epidemic of small-pox, which began at the close of 1869 and extended into the early part of 1870. The total number attacked was 69, or 2¼ per cent. on the population. The deaths were 9, or 13 per cent. on admissions.

During the past winter small-pox has not been epidemic here, a few cases only having appeared, although very prevalent and fatal in Japan both amongst foreigners and natives. By a late return from the Small-pox Hospital in London it appears that the deaths from small-pox amongst the unvaccinated were 41 per cent. on admissions, while amongst the vaccinated the deaths were only 5 per cent.

During the six months ended 31st March 1871, the deaths from all causes amongst foreigners in Shanghai amounted to 41 in a population of 3,083, or 1.3 per cent. for the half-year.

The diseases prevalent at Shanghai during the winter months differ very much from those observed in summer. In the summer months, remittent and intermittent fevers, diarrhœa, dysentery and heat apoplexy; in the winter months, intermittent fever, remittent fever of a mild type, liver affections, diarrhœa, dysentery and rheumatism are of most frequent occurrence.

During the past six months the most frequent causes of death have been dysentery, diseases of the heart, phthisis, and abscess of the liver.

In the spring of 1870 an epidemic of measles occurred at Shanghai and affected both natives and foreigners. Scarlatina is rare, but one case of suppressed scarlatina came under my care, with symptoms of effusion on the brain and insensibility for 60 hours, ending in recovery. The eruption did not appear before the ninth day, but then came out all over the body.

The disease of most frequent occurrence during the past six months has been remittent fever, comprising 10 per cent. of the whole. It was successfully treated with large doses of quinine, during the sweating stage 6 grains every second hour up to 30 grains, repeated on two successive days in smaller quantities. This treatment I have found most satisfactory both at Hongkong and Shanghai. The type of fever is the same in both places, viz., periodic—being invariably either remittent or intermittent. The remittent form sometimes becomes continued, when quinine is of no use, calomel and James's powder in moderate doses being then the most efficacious remedies. Quinine ought never to be administered with a pulse over 100. Intermittent fever was also treated with large doses of quinine during the intermissions. In attacks of remittent or intermittent fever it is of great importance to arrest the disease by exhibiting

quinine in full doses during the sweating stage. This treatment has the double advantage of stopping the fever and preventing congestion of the liver and spleen, to which viscera the blood is determined during the paroxysm, increasing with each successive attack.

Next in frequency after remittent fever came diarrhœa, rheumatism, and syphilis. Diarrhœa, although frequent in the winter months, is not of that intractable character which it sometimes assumes in the hot months. Rheumatism, although common, yielded in the majority of instances to large doses of iodide of potassium and counter-irritation.

Syphilis was of a mild character except in the secondary and tertiary forms. Iodide of potassium sufficed to effect a cure in the majority of cases, a few only requiring the addition of a mild mercurial course. Some severe cases of asthma were treated. Urticaria is frequently seen in China, and in some cases attended by much fever. Some cases of erysipelas and cynanche parotidea occurred in the autumn.

Subacute and chronic inflammations of the liver are not infrequent, also induration and obstruction, with jaundice in some instances. The fluid extract of dandelion with nitro-muriatic acid has proved most reliable in my hands.

Cases of phthisis were present in the winter months, but were mostly imported. During the past six months five deaths occurred from this disease, but chest affections in Shanghai are not generally severe.

The water supply of Shanghai is a subject of interest to every resident. I have repeatedly tested the water procured from different localities in the Huangp'u River and Soochow Creek. On the whole it is remarkably good, contains but a small quantity of organic impurity, and compares favourably with the water supplied in England. Shanghai water is not polluted to any dangerous extent with sewage, and if treated with alum, to separate the earthy matter in suspension, and then filtered, is both palatable and wholesome. I have found that water from the river if taken at high tide is purest, the reason being that then the impurities from the town are pushed up above Shanghai, and the Yangtze water fills the river for the time. Water taken at or below the Harbour Master's hulk *Ngapuhi* would afford a pure supply for the town without the expense and delay of seeking a distant source.

One subject has impressed me very forcibly since I have been in Shanghai, viz., the desirability of establishing a sanitarium at Woosung for persons suffering from fever and dysentery. In my opinion many lives might be saved by it in the summer months. The question of recovery or death is often one of temperature. Fever or dysentery, unmanageable under a high range of temperature, is easily curable with a lower temperature. At Woosung a cool sea breeze is to be had within an easy distance, more valuable in some cases than the whole materia medica.

The tables appended are incomplete from 1859 to 1863. An epidemic of cholera carried off many people in 1862–63, so that it seems fairer to calculate the mortality for the period from 1864 to 1870 inclusive, the figures being also more reliable.

The mortality on the whole population, ashore and afloat, was a little over 3½ per cent., a rate not higher than that in England, where it varies from 14 in good to 40 per thousand in bad localities.

I subjoin tables showing the total population, from the censuses taken in 1865 and 1870, the total burials for seven years (the previous returns being incomplete), and the causes of death in the 41 cases for the last six months.

POPULATION of SHANGHAI.

YEAR.	ANGLO-AMERICAN.					FRENCH.	GRAND TOTAL.
	Residents.	Shipping.	Army.	Navy.	Total.		
1865.....	2,297	981	1,319	532	5,129	460	5,589
1870.....	1,666	652	...	449	2,767	316	3,083

BURIALS.

DATE.	OLD AND NEW CEMETERY.	POOTUNG.	FRENCH.	TOTAL.	MORTALITY PER CENT.
1859	21	53	...	...	...
1860	23	83	...	...	...
1861	24	103	...	...	...
1862	61	395	...	...	...
1863	48	226	Cholera years.	...	...
1864	57	222	34	313	
1865	48	137	65	250	3.8
1866	46	74	25	145	
1867	43	62	39	144	
1868	22	51	33	106	
1869	40	61	26	127	3.6
1870	30	54	22	106	
			TOTAL, 7 years.....	1,191	

Annual mortality on total population of Shanghai for four years, 1864 to 1867 inclusive,—38 per thousand.

Annual mortality on total population of Shanghai for three years, 1868 to 1870,—36 per thousand.

Annual mortality on permanent residents alone, 1864 to 1867,—21 per thousand.

Annual mortality on permanent residents, 1868 to 1870,—18 per thousand.

Mortality on total population for the six months ended 31st March 1871,—13 per thousand, or at the rate of 26 per thousand for the year.

SIX MONTHS ended 31st March 1871.

TOTAL RESIDENTS.	DEATHS.	DEATH RATE.
3,083	41	13 per thousand.

DISEASE.	DIED.
Disease of heart	6
Phthisis	5
Asthma	2
Tuberculosis	1
Remittent fever	2
Apoplexy	1
Paralysis	1
Delirium tremens	2
Anæmia	1
Syncope	1
Carried forward.....	22

DISEASE.	DIED.
Brought forward.....	22
Dysentery	6
Abscess of the liver	4
Hepatitis	1
Dropsy	1
Bright's disease	2
Exposure to cold	1
Drowning	2
Suicide	2
	41

F.—Dr. Robert Meadows's Report on the Health of Ningpo for the Half-year ended 31st March 1871.

The port of Ningpo, lying in latitude 30° N., on the left bank of the Ningpo river, about 12 miles from its junction with the sea at Chinhai, has few characteristics which distinguish it from most of the foreign ports of Southern China. Situated in a highly fertile alluvial plain, surrounded on all sides by ranges of hills, intersected in all directions by canals and smaller irrigating ditches, it cannot be other than an insalubrious residence for foreigners, not more from the generally enervating character of the climate than from the miasmatic influences of the surrounding rice and paddy fields, which are under stagnant water for many months each year. Much greater degrees of heat and cold are felt in Ningpo than in places of exactly the same latitude in other countries; for example, New Orleans, almost identical *in latitude with Ningpo*, is never as warm in the hot season, nor is ice or snow ever seen in the neighbourhood, while in Ningpo ice several inches in thickness is formed on the flooded rice fields, and carefully stored away for summer consumption. In the winter months snow to the depth of 12 or 18 inches is quite usual, and one hears of parties passing the Chinese New Year holidays among the hills, having snow-balling tilts in February and early March. This difference is due to the constant influence of the northern and southern monsoons. Though most of the sun-scorched plains of Asia are north of the parallel 30°, on which Ningpo is situated, the influence of their burning winds is felt many degrees south even of the equator; and it is in consequence of the southern monsoon steadily blowing from April to October that Ningpo summer heat is so intense, while the northern monsoon setting in from October to April again increases the cold natural to our latitude. The following meteorological table will be useful in estimating the average temperature of Ningpo:—

Month.	Highest.	Lowest.	Mean of Highest.	Mean of Lowest.	Remarks.
October	84	56	74	64	Taken in every instance in the shade
November	70	40	59	52	
December	66	29	54	53	
January	58	28	48	37	
February	60	26	41	50	

Water.—One could scarcely imagine a scarcity of water in Ningpo, being, as it seems, a sort of natural reservoir for the water flowing from the surrounding hills; but owing to the vast quantities of decomposing animal substances always corrupting the soil in places where dead bodies are left exposed above the surface of the earth, as at Ningpo, and the obnoxious fertilisers used so generously on the cultivated land of the province, the Ningpo water is utterly unfit for drinking purposes. People living in the settlement are quite cut off from the hill waters by the river on three sides and a canal on the fourth. The tides setting up the river for many miles render the water very muddy and saltish. The natives use it after careful precipitation with alum, or after filtration. However, the perennial springs at Taying supply *foreigners with excellent water. It is brought from the vicinity of the Stone Quarries* in water boats, and is sold at a fixed rate.

Vegetation.—The fertile fields about the settlement of Ningpo are taxed to their fullest extent and capacity for productiveness. No sooner is one crop ripened and secured than the ground is made ready for its successor. In late February and early March, winter wheat, spring beans and peas appear, along with a variety of clover used chiefly as a fertiliser, and which is ploughed under after a proper season

of maturing. Paddy and rice follow the spring crops, with every species of vegetable common to southern and middle China,—peas and beans of a later sort, carrots, beet, turnips, spinach, egg-plants, the succulent sprouts of the bamboo, yams, earth nuts of several kinds, and all the varieties of cabbage known to the natives as *ts'ai*, and all the leek family termed *ts'ung*. Tea is also cultivated, but not in the immediate neighbourhood of Ningpo city. Priests in the numerous monasteries among the hills cultivate small quantities for their own use, and to set before any chance guest who may visit them. It is very similar in taste and appearance to the Japanese tea one is invited to drink in the shops of Yokohama and Yeddo, somewhat stronger perhaps in its flavour, but not sought after for exportation. Mulberry trees are little cultivated in this neighbourhood. Were they more commonly introduced about Ningpo, and could they take the place of the rice crop, the advantages to foreigners would be evident, because they require little or no artificial watering, and a crop of this kind would generate less miasma than rice or paddy. The cotton crop is latest, and often in mid-winter the white bursting bolls of the cotton plant seem disputing the rival whiteness of the snow covering their roots.

A.—During the past six months there has been, comparatively speaking, very little sickness amongst foreigners or natives in Ningpo settlement or city. The subjoined tabular list of cases coming under my care will answer with tolerable definiteness the list of questions under heading *a.* of the Inspector General's Circular.

Diseases.	October	November.	December.	January	February.	March.	Admitted.	Died.
Class.								
I.—Zymotic	8	5	1	3	2	6	25	...
II.—Constitutional	2	1	...	...	...	...	3	...
III.—Local	9	10	4	11	10	11	55	...
IV.—Developmental	...	...	...	...	...	...	...	...
V.—Accidental	...	...	2	...	...	1	3	...
Total	19	16	7	14	12	18	86	...
Order.								
I.—1. Miasmatic	5	2	...	3	1	3	14	...
2. Euthetic	1	3	...	1	1	3	9	...
3. Dietic	1	...	...	...	...	...	1	...
4. Parasitic	...	...	...	...	...	...	...	...
II.—1. Diathetic	...	...	...	...	...	...	...	...
2. Tubercular	1	...	...	...	...	...	1	1
III.—1. Nervous system	...	...	...	...	1	2	3	...
2. Organs of circulation	1	...	...	...	...	...	1	...
3. Respiratory organs	2	3	3	5	3	4	20	...
4. Digestive organs	5	5	1	4	2	3	20	...
5. Urinary organs	...	...	...	...	...	1	1	...
6. Generative organs	1	1	...	2	2	2	8	...
7. Locomotive organs	...	...	...	...	...	...	...	...
8. Integumentary system	...	1	...	1	1	1	4	...
Disease of eye	...	...	...	1	...	...	1	...
V.— Contusions	...	...	2	...	...	1	3	...
Total	17	15	6	17	11	20	86	1

Most of the cases reported were mild and amenable to treatment. Diseases of the respiratory organs consisted chiefly of catarrh, asthma and bronchitis, much more general among natives than foreigners, owing to indifferent houses and insufficient food and clothing. Amongst the miasmatics, intermittent fever of the tertian species predominated. Dyspepsia, which a facetious writer has called "the remorse of

a guilty stomach," contributed to swell the list of diseases under the head of "Diseases of Digestive Organs." The Chinese, men and women alike, suffer universally from this disease. Their food aggravates the malady, and none of them have resolution enough to refuse the hurtful articles of diet, or ingenuity enough to strike out a new regimen for themselves. On inquiring of a stout Chinese matron who complained that she could eat nothing and had a terrible pain in the pit of her stomach, I found that she had eaten three or four hard boiled eggs, over them some Chinese medicine, several potions of hot water, and was at the moment steeping the red wood of her rouge powder box for a final draught. She had simply dyspepsia, and her chest and sides were black and blue from the severe pinching and *pah*ing she had undergone. This kind of acute dyspepsia induces headache, from which women in vain try to rid themselves by dry cupping applied to the forehead.

B.—As in every Oriental town or city fevers abound, so in Ningpo there is no exemption from this law of tropical latitudes. Among foreigners, intermittent fevers of the tertian species are very prevalent, particularly in the spring and autumn. If Europeans in their airy, commodious houses suffer from this form of disease, no terms can adequately describe the condition of the natives, pent up within the high walls of their city houses, in darkness, often in penury and always in filth, when agents of death sit down in their dwellings. Typhus and typhoid fevers, the result of dirt and destitution, rage with extreme violence, and being contagious in the extreme, sweep everything before them. One often finds a whole family invalided by their pitiless visitation. Diarrhœa, dysentery, rheumatism, asthma and phthisis are also prevalent amongst the natives. Very aggravated cases of hepatic dropsy, complicated with ague, frequently come to me from the country. Elephantiasis (Arabum?), called by the natives *Ta-keō-fung*, is also common. Menorrhagia is almost universal amongst women. Ophthalmia is not so general as in the North, but still it is quite common. Tumours are frequently seen, but I do not think they are so abundant as at Hankow, nor do the natives so willingly submit to operations for their removal as do the natives there. On the whole, I am sorry to think that Western medicine and surgery are not held in such high estimation here by the natives as at some other Chinese ports.

C.—In preparing this Report I have taken special pains in several instances to inform myself of the peculiar views of the natives as to the origin, nature and treatment of their diseases. In many instances I have noted with great interest the remarkable similarity between our diagnoses and theirs. Particularly are they sagacious in defining the diseases peculiar to the different seasons of the year. The general native view is summarily this:—In September and October, owing to the sudden changes in temperature, and at the shifting of the monsoons, cold rains setting in, and variable winds and typhoons not infrequent, it is almost impossible to avoid taking cold, which develops into fevers, dysentery and cholera. Those diseases which have been moderately hopeful in their different phases until this decisive change assume then a more severe form. December, January and February are generally very healthy months; but invalids, whether consumptive, asthmatic or rheumatic, invariably are worse at this time, and hepatic dropsy, delirium tremens and eruptive diseases develop themselves. If the season is unusually rigorous, all these diseases assume an exaggerated type. A singular feature of Chinese clinics is the emphasis given to the periodicity of febrile diseases. Fever patients are thought to exhibit a marked change every seventh day, and they say the disease "runs seven days light" and "seven days heavy." A fever, intermittent in the first stage of seven days, is continuous the second seven; the third, it either leaves the system entirely or increases in violence until death. On the other hand, continued fevers passing into intermittents are not uncommon. These views of the protean character of fevers are quite in accordance with my own observations made some years ago, when practising in a malarious part of Essex, Tollesbury, near the Blackwater river. I frequently noticed patients suffering from intermittent, remittent and continued fevers during one attack. Natives and foreigners alike agree in defining disease in this part of China as asthenic, hence bloodletting and other depletory measures are seldom necessary.

D.—That the general conditions of health in China are to a great extent dependent upon seasons, climate or local surroundings, drainage and such facts, is incontrovertible. Looking to the Chinese

themselves, we may deduce from their by no means contemptible experiences and opinions the truths which, without their testimony, we might be long and bitterly learning. With regard to the effect of climate and food on the physique and character of men, their views are correct, and in the main are these:—Southern men are thin, spare, delicate, small boned, white skinned, with blood of inferior quality; subject to all diseases of an asthenic type. The lands of Southern China are watery, producing chiefly rank vegetation, while fish abounds and forms a staple article of food; with the exception of rice, their diet is comparatively innutritious. Rains are frequent, saturating the earth, rendering vegetables too succulent, so that they fail to supply their eaters with substantial nourishment, hence they become enervated; their old men contracting fevers and not having sufficient vital power to defy them die in consequence; their young men fail in the struggle with inward heats, consumptions, and hæmorrhages. Northern men are, on the contrary, tall and strong, able-bodied, with red thick skin and large strong bones, having rich, crimson blood. Their lands producing cereals and hardy woods, their food is grain and the flesh of wild beasts, and they drink wine; this gives tone and vigour to their systems. Cold winds blowing and snow and ice abounding make them bold and hardy. All their diseases are, consequently, of an acute inflammatory asthenic type. The same general principles will apply to foreigners under similar conditions.

E.—Leprosy in China seems to be divided into five different species more or less distinct from each other, and the natives hold some curious notions respecting the origin of these varieties. On the extreme summits of the hills which surround Ningpo is found, according to Chinese theory, a poisonous mist, or fiendish atmospheric element, fatal to the human system, called the *kuei-fêng*. Many persons living in the immediate neighbourhood of these peaks are afflicted with the most terrible species of leprosy. Though I have myself seen comparatively little of this disease, I have frequently heard hill-men speak of the lepers. They are never seen more than a few li away from their native hills. The first species is called *tsai-fêng*, and has the peculiarity that the hair, eyebrows and skin turn white as if livid and dead. This, I fancy, corresponds to the "morphœa alba" or "white leprosy" of many writers. The second species is called *san-tsong-chî*. The skin becomes sallow and the limbs swell. The third is *lan-fêng*, in which the whole body is covered more or less with moist, scaly ulcers. The fourth, *ta-ma-fêng* (the general name for leprosy), is often marked by one-half the body becoming leprous. The fifth, *chiu-liu-fêng*, or "nine ulcered leprosy," is so called from the disease confining itself to nine deep ulcers, generally on the lower extremities. The few lepers who have come to me for treatment have been unwilling to stay in my hospital sufficiently long to allow any satisfactory plan of treatment. If at any future time it comes within my province to treat this disease, I shall watch with interest this classification; but I think the division of species somewhat fanciful. I have not seen any cases which could not be more satisfactorily defined by the terms tubercular and anæsthetic,—the former variety being more common.

F.—There has been no disease at all assuming an epidemic form in Ningpo during the last six months. Measles has to a mild extent prevailed, but not sufficiently to produce cases in the foreign settlement.

General Remarks.—Arguing as I do in favour of the stimulating as opposed to a depletory treatment of disease, it is natural here to enter a protest against taking undue advantage of this need of stimulants in Southern China. Close observation has convinced me that the great majority of foreigners in China err on the side of eating and drinking too much. Yet a too meagre diet cannot be sufficiently denounced for this climate. A few foreigners who have been so misguided as to insist upon partially starving themselves have generally come to the conclusion, but often too late, that they were not wise in outraging nature. I seriously charge the ill-health and decaying energies of many Europeans in China to false dietetic views. A prolonged residence in this port gives one the right to speak *ex cathedrâ* on some points; and I urge upon my patients and friends alike the vital necessity of regular generous meals, with a moderate quantity of claret or other light wines or malt liquor in summer and winter. Taught as we are by the natives, great carefulness in adapting our clothing to the sudden changes of temperature, we soon learn the few rules of life absolutely indispensable to health and usefulness in China. In concluding this paper I may congratulate

the Ningpo community upon the great sanatory advantages they possess over almost every other foreign settlement on the coast. Foochow and Amoy may boast of their sea breezes and beaches; Shanghai, its Bund and Bubbling Well Road; Chefoo, its shingly seaside ride or drive; but close to Ningpo we have the Hills. Either the Tien-dong or Fêng-hua ranges offer retreats from the enervation and worries of settlement life. Their easiness of access is only rivalled by their variety and beauty of scenery. Dark woods of cypress and fir crest the spurs of many of the bolder ridges. Their slopes are often dense with evergreen shrubs, balsams and camellias; in the spring, azaleas, scarlet, purple and sometimes yellow, light up the sombreness of the brown, not yet fully revivified, herbage around. Summer brings its own regalia of jessamines, wild climbing roses, wistarias and trailing vines. Fronds, beautiful and unique, are endlessly found; indeed, I fancy the botanist will find among the dells and ravines nearly every wild flower native to this southern part of the "Flowery Kingdom." Every type of mind can gratify itself at Tien-dong, Fêng-hua or the Snowy Valley. Tourists spend thousands of pounds annually as the fashionable duty levied on seeing beautiful, sublime, or purely rural landscapes. We, dwelling in Ningpo, can invite the delicate critic to the groves and grottoes of Tien-dong, and the bold and adventurous to the abysmal chasms, and tumultuous waterfalls leaping over precipitous rocks hundreds of feet deep at Snowy Valley, quite equalling in grandeur what one finds among Alpine gorges or the depths of the Pyrenees.

G.—Memorandum on Disease at Tientsin.

During the last six months the health of Tientsin has been particularly good; only two deaths have occurred, one from chronic renal disease, the other from heart disease. The foreign population of Tientsin and Taku during the period of this Report, including shipping, numbered about 500.

No epidemic of any kind prevailed amongst the foreign or native community.

As far as my experience goes, the diseases prevalent in Tientsin are identical with those existing in Europe, presenting the same symptoms and requiring the same treatment.